

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

PROXENSE, LLC,

Plaintiff,

v.

MICROSOFT CORPORATION,

Defendant.

Case No. 6:23-cv-00319-ADA

JURY TRIAL DEMANDED

MICROSOFT'S AMENDED PRELIMINARY INVALIDITY CONTENTIONS

Pursuant to the Court’s Standing Order Governing Proceedings in Patent Cases, Microsoft Corp. (“Microsoft” or “Defendant”) provides these Amended Preliminary Invalidity Contentions to Proxense, LLC (“Proxense” or “Plaintiff”) for the claims (collectively, “Asserted Claims”) identified as asserted in Plaintiff Proxense’s Preliminary Infringement Contentions served on July 24, 2022 and Amended Preliminary Infringement Contentions served on August 10, 2023 (“Infringement Contentions”).

Defendant’s Amended Preliminary Invalidity Contentions include the accompanying claim charts concerning U.S. Patent Nos. U.S. Patent No. 8,352,730 (the “’730 Patent”); U.S. Patent No. 8,886,954 (the “’954 Patent”); U.S. Patent No. 9,298,905 (the “’905 Patent”); U.S. Patent No. 8,646,042 (the “’042 Patent”); U.S. Patent No. 9,679,289 (the “’289 Patent”); U.S. Patent No. 10,073,960 (the “’960 Patent”) (collectively, the “Asserted Patents”)

I. INTRODUCTION

As disclosed in its Preliminary Infringement Contentions served on July 24, 2022 and Amended Preliminary Infringement Contentions served on August 10, 2023 (“Infringement Contentions”) served on Defendant, Plaintiff asserts the following patents and claims:

Patent	Asserted Claims ¹	Proxense’s Alleged Priority Date	Chart Prefix
’730 Patent	<u>1-3, 5, 15</u> –17	December 20, 2004	A
’954 Patent	<u>1-3, 5</u> -7	December 20, 2004	B
’905 Patent	<u>1-2, 15</u>	December 20, 2004	C
’042 Patent	<u>10</u>	December 6, 2007	D
’289 Patent	<u>14</u> , 16	December 6, 2007	E
’960 Patent	<u>14</u> , 16	December 6, 2007	F

The claims identified above are referenced as “the Asserted Claims” unless reference is made specifically with respect to particularly identified one or more of the Asserted Patents and/or

¹ The independent claims are in bold underlined font.

one or more of the Asserted Claims. By identifying Proxense's alleged priority date for the Asserted Claims of each patent above, Microsoft does not concede that Proxense's claims of priority are correct. Further, the citation of prior art herein and the accompanying exhibits are not intended to reflect Defendant's claim construction contentions, which will be disclosed in due course in accordance with the Scheduling Order (Dkt. No. 28). Instead, Microsoft's Amended Invalidity Contentions as set forth herein and in the accompanying exhibits may reflect Plaintiff's apparent claim constructions based on its Infringement Contentions.

As further detailed in and supported by these Invalidity Contentions, Defendant contends that each of the Asserted Claims is invalid under at least 35 U.S.C. §§ 101, 102, 103, and/or 112.² Defendant reserves the right to prove the invalidity of the Asserted Claims on bases other than those required to be disclosed in these disclosures pursuant to the Standing Order Governing Proceedings in Patent Cases.

II. RESERVATION OF RIGHTS

Based on this disclosure of the Asserted Claims, Microsoft does not provide any contentions regarding any claims not asserted in Proxense's Infringement Contentions. To the extent that the Court permits Proxense to assert additional claims against Microsoft to amend its infringement contentions and/or assert one more claims other than the Asserted Claims, Microsoft reserves the right to further modify, amend, or supplement these invalidity contentions accordingly—for example, to show the invalidity and/or ineligibility of any such newly Asserted Claims.

² References to Title 35 of the United States Code are to statutes prior to amendment under the America Invents Act ("AIA"), to the extent that the Asserted Patents have effective filing dates prior to applicable AIA effective dates, and to the current statutory provisions with respect to Asserted Patents having effective filing dates after the applicable AIA effective dates.

This Court's Standing Order Governing Proceedings requires that these invalidity contentions be served after Proxense's Infringement Contentions, which must be "in the form of a chart setting forth where in the accused product(s) each element of the asserted claim(s) are found." Proxense's infringement contentions fail to put Microsoft on notice of Proxense's theories for why Microsoft's products are purportedly infringing, or how Proxense interprets the limitations of its asserted patent claims as covering Microsoft's products.

These Amended Preliminary Invalidity Contentions do not constitute an admission that any accused products infringe the Asserted Patents. In other words, these Amended Preliminary Invalidity Contentions should not be deemed to be related to the non-infringement positions that Microsoft may advance in this action. In particular, Microsoft's Amended Preliminary Invalidity Contentions are made in addition to, and/or in the alternative to, Microsoft's non-infringement positions, and should not be interpreted to rely upon, or in any way affect, the non-infringement arguments Microsoft makes in this case.

Microsoft provides these disclosures consistent with the schedule currently in place, but do so without waiving any right to receive from Proxense such full and complete specific infringement disclosures as should have been provided within Proxense's Infringement Contentions. Microsoft's compliance with the current schedule should not be viewed as a waiver of any right to seek relief regarding the deficiencies in Proxense's Infringement Contentions or to further amend or supplement its Preliminary Invalidity Contentions once Proxense complies with the Court's requirements.

Microsoft further reserves the right to revise these Invalidity Contentions in view of the Court's construction of terms and phrases recited in one or more of the Asserted Claims, additional information obtained during discovery, additional infringement theories put forth by Plaintiff

during fact and/or expert discovery, any findings as to the priority date(s) of the Asserted Claims, and/or positions that Plaintiff, its fact witnesses, or its expert witness(es) may take concerning claim construction, infringement, and/or invalidity issues, as permitted by the Court. Microsoft further reserves the right to supplement their accompanying document productions should they later discover additional prior art documents, information, testimony, prior art systems and related documentation, and/or software or hardware code, including information provided by third parties after the date of service of these Invalidity Contentions.

Additionally, Plaintiff has not identified its contentions regarding the level of ordinary skill in the art for any of the Asserted Patents. Thus, Microsoft has based its Invalidity on the level of skill in the art apparent from the face of the asserted patents. For the avoidance of doubt, Microsoft contends that the asserted claims are invalid for the reasons set forth in their Invalidity Contentions under any plausible definition of the level of ordinary skill for each of the Asserted Patents. Nevertheless, Microsoft reserves the right to revise these Invalidity Contentions in response to any position taken by Plaintiff on the level of ordinary skill in the art applicable to a given Asserted Patent.

Microsoft may further rely on inventor admissions concerning the scope or state of the prior art relevant to the Asserted Claims, the patent prosecution histories of the Asserted Patents, related patents and/or patent applications, any deposition or trial testimony of the named inventors on the Asserted Patents, and the papers filed and any evidence produced or submitted by Plaintiff in connection with these cases or other related litigation. Microsoft reserves the right to contend that one or more of the Asserted Claims are invalid under 35 U.S.C. § 102(f) in the event Microsoft obtains evidence that one or more of the named inventors did not invent the subject matter in the Asserted Claims.

Prior art not included in these Invalidity Contentions, whether known or not known to Microsoft, may become relevant. In particular, Microsoft is currently unaware of the extent, if any, to which Plaintiff will contend that limitations of the Asserted Claims are not disclosed in the prior art identified in these Invalidity Contentions. Accordingly, Microsoft reserves the right to identify other references that would disclose the allegedly missing limitation(s) of the claimed method, device, or system.

The references identified in these Invalidity Contentions, which include the attached claim charts, may disclose the elements of the Asserted Claims explicitly and/or inherently, render those elements alone or in combination obvious to those of ordinary skill in the art even absent an explicit or inherent disclosure, and/or they may be relied upon to show the state of the art in the relevant time frame. References identified in these Invalidity Contentions, as well as the “References Cited” on the face of the Asserted Patents and the patents cited within the body of the Asserted Patents, may be used to illustrate, but not limit the scope of, the state of the art to which the Asserted Patents pertain (i.e., at a time prior to the date of alleged inventions of the Asserted Claims of the Asserted Patents). Moreover, Microsoft reserves the ability to rely on later-identified sources of information, including but not limited to witness testimony and other discovery, to establish the state of the art in the relevant time frame pertaining to the Asserted Patents.

Because discovery is ongoing, Microsoft anticipates that additional prior art and invalidity bases may be found. Microsoft’s investigation and analysis of the prior art is continuing, and thus Microsoft reserves the right to supplement, amend, and/or revise the information provided herein as Microsoft conducts further investigation and/or analysis, including identifying, charting, and relying on additional references.

Additionally, in view of likely third-party discovery that will be taken, Microsoft reserves the right to present additional items of prior art under 35 U.S.C. §§ 102(a), (b), (e), and/or (g) and/or § 103 located during discovery or further investigation, and to assert contentions of invalidity under 35 U.S.C. §§ 102(c), (d), or (f). For example, Microsoft expects to issue subpoenas to third parties believed to have knowledge, documents, and/or other evidence concerning invalidity of one or more of the Asserted Claims.

In addition to the positions and prior art identified in these Invalidity Contentions (including the accompanying claim charts), Microsoft also incorporates by reference all invalidity contentions and subject matter eligibility contentions, prior art, and invalidity claim charts (including, without limitation, all anticipation positions, obviousness positions [including all prior art combinations and motivations to combine], indefiniteness positions, written description positions, and non-enablement positions) concerning one or more of the Asserted Patents, as disclosed at any time. This includes without limitation disclosures in previous or related litigation, in United States Patent & Trademark Office (“USPTO”) proceedings, by the Plaintiff, by any other parties accused of patent infringement by the Plaintiff, or by the named inventors or any individuals associated with the prosecution and/or any form of post-grant review or reexamination of the Asserted Patents.

Specifically, for example, Microsoft identifies, as prior art upon which they may rely to show the invalidity of the Asserted Claims, the prior art references disclosed by parties in any other litigation (including *inter partes* review and/or reexamination proceedings) involving one or more of the Asserted Patents, any patent related to any of the Asserted Patents, and/or any other patent allegedly assigned to Plaintiff claiming priority to the Asserted Patents (collectively, “Other Proxense Proceedings”). See IPR2021-01444; IPR2021-01447; IPR2021-01448; EPRX

90/015,052; EPRX 90/015,053. To the extent Microsoft has stipulated or stipulates in the future that it will not pursue certain invalidity grounds in these actions concerning patent claims subject to instituted *inter partes* review proceedings, Microsoft will abide by those stipulation(s), and nothing in these contentions should be read as suggesting otherwise. Rather, these contentions are intended to put Plaintiff on notice of the grounds of invalidity that Microsoft may assert in these actions, including because the conditions of any relevant stipulation are not met (*e.g.*, if the corresponding *inter partes* review is not instituted) or because the grounds fall outside the scope of such stipulation(s).

Microsoft notes that the law regarding whether “Admitted Prior Art” may be used in an *inter partes* review is subject to at least one case currently pending before the Federal Circuit. *See* Br. of Appellant Qualcomm Incorporated at 13, *Qualcomm Inc. v. Apple Inc.*, No. 23-1208 (Fed. Cir. March 20, 2023) (“Did the Board err in interpreting Section 311(b) to permit Apple’s Ground 2, which consists of so-called applicant admitted prior art (AAPA) in view one or more prior art patents or printed publications?”). Further developments regarding the law may impact the scope and effect of any relevant stipulations.

Plaintiff has a present and ongoing duty to produce to Microsoft all relevant documents from any other Proxense Proceedings, including but not limited to all prior art, invalidity contentions, and expert reports on invalidity (among other relevant items).

Microsoft reserves the right to supplement or otherwise amend these Invalidity Contentions in response to any relevant discovery provided by third parties, Plaintiff, opening or rebuttal expert reports, fact or expert depositions, or in response to any claim construction ruling(s) issued by this Court (regardless of how and when such ruling is made). Microsoft also reserves the right to

supplement or otherwise amend these Invalidity Contentions in response to any rebuttal evidence disclosed by Plaintiff or as otherwise may be necessary or appropriate under the circumstances.

III. HISTORY OF THE TECHNOLOGY

A. Microsoft's Early Work in Passwordless Authentication

Identity federation generally refers to the authentication process for a resource shared among users on different computer systems.³ By contrast, single sign-on (SSO), which preceded identity federation, enabled access to applications and resources within a single domain. Microsoft played a key role in developing technology related to identity federation as far back as 2003, before Proxense's earliest priority date for any of its Asserted Patents.

By 2003, Microsoft developed Windows communications technologies, code-named "Indigo," which provided capabilities for authentication across different services on a network. In 2006, Indigo evolved into "Windows Communication Foundation" (WCF), which retained the use of bindings that allowed for authentication of messages across platforms. In 2007, Microsoft launched "Windows Identity Foundation" (WIF), a programming model that complemented WCF by providing a uniform framework for authentication across different domains.

With products such as Windows Server 2003, Microsoft has long supported both federated identity and password-less authentication. In particular, a domain controller running Windows Server 2003 authenticated users and applications using one of two protocols: Kerberos V5 or NTLM.⁴ The Kerberos V5 protocol was the default protocol for computers running Windows

³ See *Security Assertion Markup Language V2.0*, at 9 (March 25, 2008) docs.oasis-open.org/security/saml/Post2.0/sstc-saml-tech-overview-2.0.html

⁴ *Migrating Windows NT Server 4.0 Domains to Windows Server 2003 Active Directory*, <https://web.archive.org/web/20041230091246/http://www.microsoft.com/windowsserver2003/evaluation/whyupgrade/nt4/nt4domtoad.msp> (December 30, 2004 Screenshot); <https://web.archive.org/web/20051124123033/http://download.microsoft.com/download/2/9/6/2964bd25-6221-45a3-8115-a547cd640cd4/NT4domtoad.doc> (published March 2003)

2000, Windows XP Professional, or Windows Server 2003.⁵ Under Kerberos V5, a client (generally either a user or a service) sends a request for a ticket to the Key Distribution Center (KDC). The KDC creates a ticket-granting ticket (TGT) for the client, encrypts it using the client's password as the key, and sends the encrypted TGT back to the client.⁶ The client then attempts to decrypt the TGT, using its password. If the client successfully decrypts the TGT (i.e., if the client gave the correct password), it keeps the decrypted TGT, which indicates proof of the client's identity.⁷ The TGT, which expires at a specified time, permits the client to obtain additional tickets.⁸ These tickets give permission for specific services.⁹ These steps are illustrated below:¹⁰

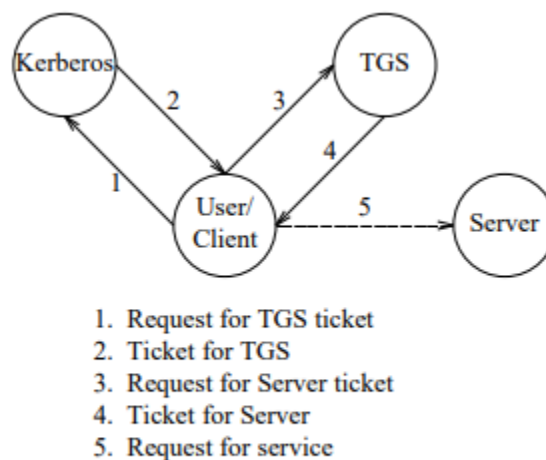


Figure 9. Kerberos Authentication Protocols.

In 2003, Microsoft developed Windows Rights Management System (“RMS”), a software that provides platform-based approach to providing persistent policy rights for all types of sensitive

⁵ *Id.*

⁶ *Kerberos V5*, <https://web.archive.org/web/20031211000337/http://web.mit.edu/kerberos/krb5-1.3/krb5-1.3.1/doc/krb5-user.html> (December 11, 2003 Screenshot) (“Kerberos”)

⁷ *Id.*

⁸ *Id.*

⁹ *Id.*

¹⁰ *Kerberos: An Authentication Service for Open Network Systems*, https://www.cs.unc.edu/~fabian/course_papers/steiner_neuman.pdf (March 30, 1998)

corporate documents.¹¹ For example by using RMS, users can implement certain information rights management policies for applications such as information portals, word processors, and/or email clients.¹² Microsoft's work on RMS resulted in a number of patents including, but not limited to, providing secure server key operations and systems for information protection policies.¹³ The RMS began to be integrated into other Microsoft software, including Microsoft's Active Directory, commonly referred to as AD RMS.¹⁴ For example, if RMS protected documents were to be shared with outside or external users, an identity federation protocol would be used to authenticate a user.¹⁵

Prior to 2005, several identity federation standards existed, including SAML 1.1 and Shibboleth—both of which were available as early as 2003.¹⁶ In 2005, Microsoft launched Active Directory Federation Services (“ADFS”), which was a service that was a part of AD RMS, that a user could call to authenticate an external user and grant the appropriate rights to the authenticated user. This process could be used to control documents and email in the Microsoft Suite (*e.g.*, Word, Excel, and Outlook). ADFS provided identity federation across domains so users do not have to log in separately for each domain. Microsoft also introduced identity selectors such as Microsoft InfoCard, which implemented the WS-Trust protocol to obtain and exchange tokens, which is shown in the diagram below:¹⁷

¹¹ *Microsoft Announces Windows Rights Management Services For Windows Server 2003*, (Feb 21, 2003) <https://news.microsoft.com/2003/02/20/microsoft-announces-windows-rights-management-services-for-windows-server-2003/>

¹² *Id.*

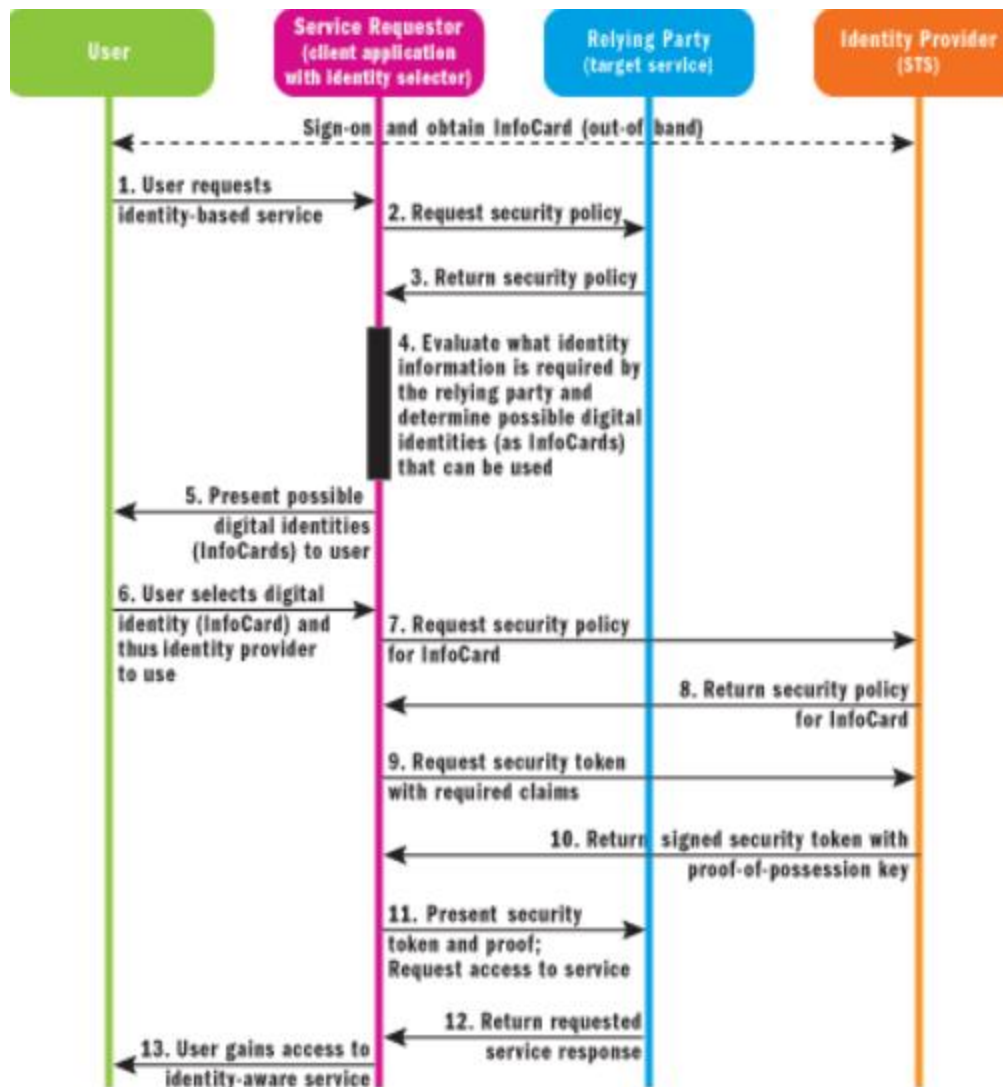
¹³ *E.g.*, U.S. Patent No. 7,577,999; U.S. Patent No. 7,631,318; U.S. Patent No. 7,443,985; U.S. Patent No. 7,891,007; U.S. Patent No. 8,156,538; U.S. Patent No. 8,229,996.

¹⁴ [https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-r2-and-2012/hh831364\(v=ws.11\)](https://docs.microsoft.com/en-us/previous-versions/windows/it-pro/windows-server-2012-r2-and-2012/hh831364(v=ws.11))

¹⁵ *Id.*

¹⁶ SAML 1.1 (August 2003); Shibboleth (July 2003).

¹⁷ Step-by-Step Guide to InfoCard, (May 2006) <https://learn.microsoft.com/en-us/archive/msdn-magazine/2006/may/security-briefs-step-by-step-guide-to-infocard>



By 2009, Microsoft added two identity standards: Security Assertion Markup Language (“SAML”) and WS-Federation identity standard to ADFS.¹⁸ These protocols defined how different domains can implement identity federation, to ADFS. Thus, Microsoft played an important role in developing identity federation standards and techniques commonly used to authenticate individuals who are not on the same server or same organization dating back to at least 2003.¹⁹

¹⁸ Zulfilqar Ahmed, *AD FS 1.0 in Identity Solutions*, Microsoft J. for Developer MSDN Mag., 50-58 (Nov. 2009); *Security Assertion Markup Language V2.0*, at 9 (March 25, 2008) docs.oasis-open.org/security/saml/Post2.0/sstc-saml-tech-overview-2.0.html

¹⁹ E.g., U.S. Patent No. 9,736,153; U.S. Pat. No. 7,401,235; U.S. Pat. No. 8,108,672; (“Domain-Based Administration of Identity-Based Cryptosystems for Secure Email and IPSEC.” 12th USENIX Security Symposium.

Microsoft applications could also use Active Directory for authentication and service publication while using Active Directory Application Mode to store user personalization data.²⁰

The Figure below illustrates the architecture for this solution:

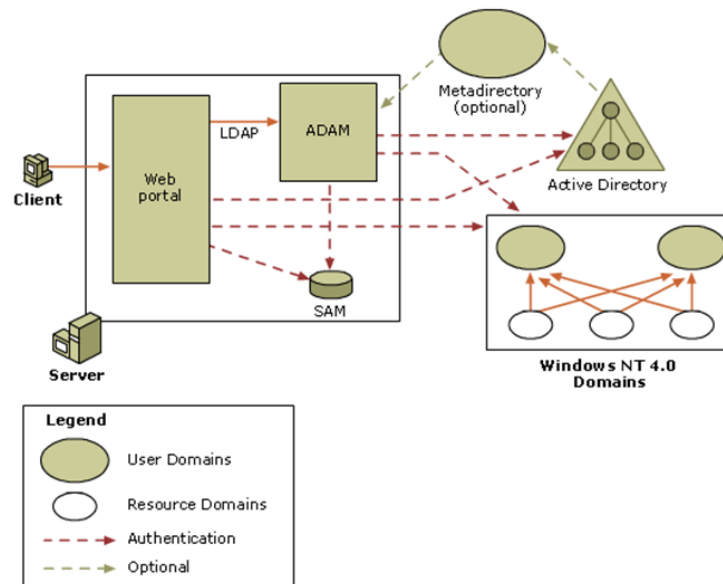


Figure 1: Application-Specific Solution

By using this implementation, applications could store their data in either Active Directory or in Active Directory Application Mode (“ADAM”).²¹ If users wanted their application to store application-specific data, such as policy and management information that was needed only by a specific application, this data could be stored in ADAM while using the user principals in Active Directory for authentication and for controlling access to objects in ADAM.²² By making it

(2003); (“Toward Hierarchical Identity-Based Encryption.” International Conference on the Theory of Applications of Cryptographic Techniques. Pp. 466-481. Springer, Berlin, Heidelberg, (2002); (“Identity-Based Encryption from the Weil Pairing.” Annual International Cryptology Conference. Springer, Berlin, Heidelberg, (2001); Security Assertion Markup Language, v2.0 (2008); OAuth (v1.0 (2010); WS-Federation (v1.2 (2009); WS-Trust (v1.4 (2009); OAuth Core 1.0 (December 4, 2007); SAML v1.1 (August 2003); SAML v2.0 (March 2005); Shibboleth (July 1, 2003); Liberty ID-F Version 1.2 (September 16, 2004).

²⁰ *Introduction to Windows Server 2003 Active Directory Application Mode* (published August 11, 2002), <https://web.archive.org/web/20050105211702/http://www.microsoft.com/windowsserver2003/techinfo/overview/adam.mspx>; <https://web.archive.org/web/20051105015124/http://download.microsoft.com/download/5/7/a/57a8d3ed-89f7-4878-b945-b68c447f288a/Adam.DOC> (published August 2003)

²¹ *Id.*

²² *Id.*

unnecessary for each ADAM directory to have its own user database, Microsoft's solution prevented a proliferation of user IDs and passwords for end users every time a new directory-enabled application was introduced on the network.²³

Over the next decade, FIDO2, OpenID, and WebAuthn were launched to unify and spread implementation of password-less authentication and identity federation across web applications.²⁴ Microsoft shaped the development of the aforementioned standards.

B. Biometric Technology

History of Fingerprint Technology. There is archaeological evidence that fingerprints as a form of identification have been used at least since 7000 to 6000 BC by the ancient Assyrians and Chinese.²⁵ Chinese documents bore a clay seal marked by the thumbprint of the originator.²⁶ Bricks used in houses in the ancient city of Jericho were sometimes imprinted by pairs of thumbprints of the bricklayer.²⁷

In the mid-1800's scientific studies were begun that would established two critical characteristics of fingerprints that are true still to this day: no two fingerprints from different fingers have been found to have the same ridge pattern, and fingerprint ridge patterns are unchanging throughout life.²⁸ These studies led to the use of fingerprints for criminal identification, first in Argentina in 1896, then at Scotland Yard in 1901, and to other countries in the early 1900's.²⁹

²³ *Id.*

²⁴ *WebAuthn APIs for passwordless authentication on Windows*, (July 27, 2023) <https://learn.microsoft.com/en-us/windows/security/identity-protection/hello-for-business/webauthn-apis>

²⁵ Lawrence O'Gorman, *Fingerprint Verification* in *Biometrics: Personal Identification in Networked Society* 43, 44 (Anil K. Jain, Ruud Bolle, and Sharath Pankanti eds., 1996).

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.*

²⁹ *Id.*

Computer processing of fingerprints began in the early 1960s with the introduction of computer hardware that could reasonably process these images. Since then, automated fingerprint identification systems (APIS) have been deployed widely among law enforcement agencies throughout the world.³⁰

In the 1980s, innovations in two technology areas, personal computers and optical scanners, enabled the tools to make fingerprint capture practical in non-criminal applications such as for ID-card programs.³¹ In the late 1990s, the introduction of inexpensive fingerprint capture devices and the development of fast, reliable matching algorithms has set the stage for the expansion of fingerprint matching to personal use.³²

Biometric Authentication. In the 1990s, companies focused on biometrics began to form. As an example, AuthenTec, Inc., spun off from Florida-based defense contractor Harris Corp. in 1998, produced biometric sensor chips for top companies like Hewlett-Packard and Dell.³³ As a further example, the Department of Justice used the Integrated Automated Fingerprint Identification System, which was started in 1999 and was the largest biometrics database in the world, holding over 55 millions subjects on file at the time.³⁴ From criminals to mobile phone users, such fingerprint-matching systems were widely used to authenticate the identities of different individuals.³⁵

Microsoft itself developed and sold biometric authentication devices as early as September 2004. This includes without limitation the Microsoft Fingerprint Reader, the Microsoft Wireless IntelliMouse Explorer with Fingerprint Reader, and the Microsoft Optical Desktop with

³⁰ *Id.*

³¹ *Id.*

³² *Id.*

³³ <https://www.reuters.com/article/us-authentec-acquisition-apple-idUSBRE86Q0KD20120727>

³⁴ Kunal Kumar and Mohammed Farik, *A review of Multimodal Biometric Authentication Systems*, Int'l. J. of Scientific and Tech. Research, 1 (Dec. 2016).

³⁵ *Id.*

Fingerprint Reader—all of which allowed users to access websites and Windows user accounts or workstations by using their fingerprint.³⁶ An image of the Microsoft Fingerprint Reader from September 2004 is shown below:³⁷



For a Microsoft® Windows®-based computer:	
Computer/Operating System	Windows XP Home, Professional, Tablet PC, or Media Center Edition with a Pentium 233 MHz or higher processor and 128 MB of RAM
Hard Disk Space	45 MB of available hard disk space
Connectivity	An available universal serial bus (USB) port
Other	• CD-ROM drive • Microsoft® Internet Explorer 6.0 or later and MSN® Explorer 8.0 and 9.0

Such biometric authentication software was well-known prior to 2004. For example, the '730 patent describes how “conventional techniques for comparing fingerprints can be used” to validate a user’s fingerprint. '730 Patent at 4:19-23. It goes on to provide that “the unique pattern of ridges and valleys of the fingerprints can be compared” for user authentication” or “[a] statistical model can be used to determine comparison results.” *Id.*

C. Hybrid Device Technology

Proximity Sensors. A proximity sensor is a sensor that detects an object based on its distance from the sensor. Wilfried Gehl, Walter Pepperl, and Ludwig Fuchs invented the first

³⁶ Wireless IntelliMouse Explorer with Fingerprint Reader (Sept. 28, 2004)
<http://web.archive.org/web/20040928011049/http://www.microsoft.com/hardware/mouseandkeyboard/productdetails.aspx?pid=035>,

³⁷ *System Requirements*,
<http://web.archive.org/web/20041210120252/http://www.microsoft.com/hardware/mouseandkeyboard/systemrequirements.aspx?pid=036> (Dec. 10, 2004)

proximity sensor in 1958.³⁸ This technology proved to be an important invention for the world of automation and set the standard for reliable, no-contact detection of metallic objections.³⁹ Proximity sensors became a valuable component to many industries and by the end of the 1980s, millions of proximity sensors were sold in Germany alone.⁴⁰ Since then, proximity sensor saw continuous advancements and uses, including, magnetic field sensors for detecting the position of pistons and capacitive sensing.

RFID Technology. Among those advancements to the basic concept of proximity sensors was Radio Frequency Identification (“RFID”) location tracking. The development of RFID technology began as early as 1906 when Ernst F. W. Alexanderson showed the first continuous wave radio generation and transmission of radio signals.⁴¹ Since then, RFID gained popularity during World War II as a method to track planes and warn others if the planes were quickly approaching.⁴²

During the 1950s through the 1970s, radar and RF communication systems saw significant advances, including the use of RF energy to identify objects remotely. *Id.* Other important developments that contributed to the success of RFID technology during this time included: the transistor, the integrated circuit, the microprocessor, communication networks, and changes in business.⁴³ By 1973, one of the first patents relating to RFID technology was granted to an entrepreneur Charles Walton, for a passive transponder used to unlock a door without a key.⁴⁴

³⁸ <https://amplify.pepperl-fuchs.com/articles/174/an-innovation-that-changed-the-world-of-automation>

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ Jeremy Landt, *The history of RFID*, IEEE (Oct. 2005).

⁴² Bob Violino, *The History of RFID Technology*, RFID J. (Jan 16, 2005) <https://www.rfidjournal.com/the-history-of-rfid-technology>

⁴³ Landt, at 9.

⁴⁴ Violino at 1.

Specifically, a card with an embedded transponder communicated a signal near the door and if the reader detected a valid identity number, the reader would unlock the door.⁴⁵

Over the years, the use of a passive RFID transponder was improved. For example, the Los Alamos National Laboratory developed an RFID tag that tracking nuclear materials that had an operational range of tens of meters.⁴⁶ Companies developed small low frequency transponders to put in cards and control access to buildings.⁴⁷ RFID systems are now widely used for access control, payment systems and other assets.⁴⁸

Many of these aspects of RFID systems existed well before 2006. For example, the '042 patent confirms how RFID technology can be “attached to objects to be tracked.” '042 patent, 1:38-51. RFID tags and readers can be used “to track inventory,” “trace the route of objects through various locations,” and “track[] people. . .to better understand their behavior.” *Id.* To do this, the '042 patent describes certain components that were well known at the time of its alleged invention, including the use of a personal digital key. *Id.* at 3:47-61. The personal digital key “stores digital information in a tamper proof format that uniquely associates the PDK with an individual.” *Id.* The '042 patent further describes that the RFID sensors “use[] standard communication technologies and/or protocols” and any data links can be “encrypted using conventional encryption technologies.” *Id.* at 4:41-62.

Smartcards. Relatedly, around the same time that RFID technology was becoming popular, the smartcard was conceptualized in the mid-1970s.⁴⁹ The first smart card (which was not actually a card) was invented by Roland Morena, a French inventor. He showed how a ring could

⁴⁵ *Id.*

⁴⁶ *Id.*; Landt at 9.

⁴⁷ Violino at 1.

⁴⁸ *Id.*

⁴⁹ <https://condor.depaul.edu/elliott/shared/projects-archive/DS420Fall99/smartcard/project/SChistory.html>

be used to obtain funds and make purchases at merchants which had payment equipment.⁵⁰ By 1979, the first operational microprocessor card was created.⁵¹ Through the 1980s, smartcards were becoming popular in much of Europe.⁵² It wasn't until the early 1990s that a number of multi-regional U.S. banks started to use smart cards for various types of transactions.

Multi-Factor Authentication. Multi-factor (or two-factor) authentication technology dates back to the 1980s.⁵³ This type of authentication is a form of login technology that asks users to offer a second, corroborative piece of information (e.g., a text message or email) along with their name and password.⁵⁴ Multifactor authentication became more widely known by consumers when it was introduced in the 2000s through rollouts with banks.⁵⁵

IV. IDENTIFICATION OF PRIOR ART

Subject to Microsoft's reservations of rights, Microsoft identifies each item of prior art that anticipates or renders obvious the Asserted Claims below.

A. U.S. Patent No. 8,352,730

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '730 Patent are provided in attached Exhibits A1 through A23.

Table 1-A: Prior Art Patents and Printed Publications for the '730 Patent

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7574734 ("Fedronic")	8/11/2009	8/15/2002
US20020124176A1 ("Epstein")	9/5/2005	12/14/1998
US6751733 ("Nakamura")	6/15/2004	6/16/1999
US7481363 ("Zuili")	8/5/2004	12/30/2003

⁵⁰ *Id.*

⁵¹ *Id.*

⁵² *Id.*

⁵³ Caroline Delbert, *History of Online Security from CAPTCHA to Multi-Factor Authentication* (May 31, 2022) <https://www.beyondidentity.com/blog/history-online-security>

⁵⁴ *Id.*

⁵⁵ *Id.*

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US20060075230A1 ("Baird")	4/6/2006	10/5/2004
US6957337 ("Chainer")	10/18/2005	8/11/1999
US7412603(B2) ("Yeates")	8/12/2008	12/5/2003
US7590861 ("Abdallah")	9/15/2009	8/6/2003
US7961915 ("Davida")	6/14/2011	4/9/2010
US8046589 ("Akkermans")	10/25/2011	6/22/2005
US20100077224A1 ("Milgramm")	3/25/2010	4/23/2002
WO 99/56429 ("Scott")	11/4/1999	4/26/1999
US 2004/0044627 ("Russell")	3/4/2004	11/29/2000
US 2001/0000535 ("Lapsley")	4/26/2001	12/6/2000
US 2003/0177102 ("Robinson")	9/18/2003	2/19/2003
US 2004/0153649 ("Rhoads")	8/5/2004	9/4/2003
US 7239226 ("Berardi")	7/3/2007	7/9/2002
US 6175921 ("Rosen")	1/16/2001	7/16/1997
US 2002/0109580 ("Shreve")	8/15/2002	2/15/2001
US 2003/0055792 ("Kinoshita")	3/20/2003	7/19/2002
US 7188110 ("Ludtke")	3/6/2007	12/11/2000
US 2003/0196084 ("Okereke")	10/16/2003	4/11/2003
US20050050367A1 ("Burger")	3/3/2005	9/30/2004
US 6850147 B2 ("Prokoski")	2/1/2005	4/1/2002
US 7178025 ("Scheidt")	2/13/2007	1/30/2003
US 8751801 B2 ("Harris")	6/10/2014	4/22/2005
US 9979709 B2 ("Abdallah '709")	5/22/2018	9/9/2015
US 6709333 B1 ("Bradford")	3/23/2004	4/14/2003
US 6751733 B1 ("Nakamura")	6/15/2004	6/16/1999
US 7389269 B1 ("Robinson '269")	6/17/2008	5/19/2004
US 7591425 B1 ("Zuili '425")	9/22/2009	7/29/2006
US 7631193 ("Hoffman")	12/8/2009	1/23/2002
US 8260716 B2 ("Hoffman '716")	9/4/2012	12/28/2005
US 7676834 B2 ("Camaisa")	3/9/2010	7/15/2004
US 8200980 B1 ("Robinson '980")	6/12/2012	6/7/2004
US 8499164 B2 ("Ortiz")	7/30/2013	2/25/2011
US 2003/0005326A1 ("Flemming")	1/2/2003	6/29/2001
US 2004/0187018 A1 ("Owen")	5/13/2008	10/9/2001
US 2009/0172812 A1 ("Mercredi")	7/2/2009	3/10/2009
US 2018/0309750 A1 ("Johnson")	10/25/2018	2/6/2018
US 6363485 ("Adams")	3/26/2003	9/9/1998
US 6983882 B2 ("Cassone")	1/10/2006	3/31/2003
US 7427019 B2 ("Haertel")	9/23/2008	8/25/2005
US 8004491 B2 ("Maynard")	8/23/2011	4/11/2007
US 8622842 B2 ("Nguyen")	1/7/2014	9/11/2012
US 11232670 B2 ("Cipriano")	1/25/2022	6/26/2020
US 2004/0030894 A1 ("Labrou")	4/1/2008	6/11/2003

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US 2005/0033702 A1 (“Holdsworth”)	2/10/2005	1/16/2003
US 2005/0193198 A1 (“Livowsky”)	9/1/2005	1/27/2005
US 2006/0016877 A1 (“Bonalle”)	1/15/2008	7/1/2004
US 2006/0106605 A1 (“Saunders”)	5/18/2006	11/12/2004
US 2007/0021141 A1 (“Yokota”)	1/25/2007	10/5/2004
US 2017/0286955 A1 (“Moskowitz”)	10/5/2017	6/12/2017
US 2020/0228526 A1 (“Milgramm”)	7/16/2020	3/30/2020
US 6819219 B1 (“Bolle”)	11/16/2004	10/13/2000
US 2003/0074317 A1 (“Hofi”)	4/17/2003	10/15/2001
US 2003/0120934 A1 (“Ortiz”)	6/26/2003	12/17/2002
US 6353889 B1 (“Hollingshead”)	3/5/2002	5/13/1998
US 2003/0220876 A1 (“Burger”)	11/27/2003	3/19/2003
C. Adams, “Internet X.509 Public Key Infrastructure Certificate Management Protocols”	March 1999	-
P.J. Skevington, “Trusted third parties in electronic commerce”	April 1997	-
D. Spinellis, “Trusted Third Party Services for Deploying Secure Telemedical Applications over the WWW”	1999	-

Table 2-A: Prior Art Systems and Inventions for the '730 Patent

Name of System or Invention⁵⁶	Date of Sale / Offer for Sale / Public Use / Known by Others
AuthenTec FingerLoc System (“AuthenTec”)	1996
Chameleon Network’s Pocket Vault (“Chameleon”)	2004
DigitalPersona U.are.U Pro for Active Directory (“DigitalPersona”)	2000
Microsoft Fingerprint Reader + Windows Server Active Directory (“Microsoft Fingerprint Reader”)	2004
Microsoft Optical Desktop + Windows Server Active Directory (“Microsoft Optical Desktop”)	2004
Microsoft Wireless IntelliMouse + Windows Server Active Directory (“Microsoft Wireless IntelliMouse”)	2004
Ringdale Access Control Systems (“Ringdale”)	2002
Sony Puppy Fingerprint Identity Device (“Sony Puppy FIU”)	2004

⁵⁶ “System” includes any relevant combination of hardware and/or software including, without limitation, computers, mobile phones and tablets, biometric scanners, smartcards, RFID systems, location trackers, etc.

Name of System or Invention⁵⁶	Date of Sale / Offer for Sale / Public Use / Known by Others
UPEK TouchChip Trusted Fingerprint Module (“UPEK”)	2004
WS-Federation	2004
WS-Trust	2004
Indigo	2003
The Pocket Vault System (“Pocket Vault”)	2004
The RWKLB575 System (“RWKLB575”)	2003

Table 3-A: Charts for the ’730 Patent

Exhibit No.	Prior Art Reference/System
A1	Fedronic
A2	Scott
A3	Berardi
A4	Ludtke
A5	Robinson
A6	Abdallah
A7	Burger
A8	Akkermans
A9	Baird
A10	AuthenTec
A11	Chameleon
A12	DigitalPersona
A13	Microsoft Fingerprint Reader
A14	Microsoft Optical Desktop
A15	Microsoft Wireless IntelliMouse
A16	Ringdale
A17	Sony Puppy FIU
A18	UPEK
A19	Bolle
A20	Hofi
A21	Ortiz
A22	Pocket Vault
A23	RWKLB575

For each of the prior art devices identified above, Microsoft has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Microsoft has obtained or is in the process of attempting

to obtain the identified devices and will make them available for inspection to the extent they are obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Microsoft is actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-A.

Discovery is ongoing, and Microsoft may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Microsoft reserves the right to supplement these contentions accordingly. Microsoft continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Microsoft's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '730 Patent. Microsoft's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the

third-party prior art systems anticipate or render obvious the Asserted Claims of the '730 Patent. As such, Microsoft reserves all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the '730 Patent. Microsoft has obtained, and is in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Microsoft reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Microsoft reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Microsoft will make all such devices, software programs, or other products in Microsoft's possession, custody, or control available for inspection by Plaintiff.

Consequently, Microsoft reserves the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Microsoft identifies, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed in Tables 1-A and 2-A as evidence of the state of the art as it relates to user authentication, including but not limited to biometric authentication and biometric processing.

Each of these references show that the concept of biometric authentication is not novel and was well-known for many years before the alleged priority date of the '730 Patent, as discussed in

more detail in Section VI.B (obviousness). In light of the references discussed herein, the Asserted Claims of the '730 Patent cannot be valid.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '730 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Microsoft has not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Microsoft reserves the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

B. U.S. Patent No. 8,886,954

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '954 Patent are provided in attached Exhibits B1 through B23.

Table 1-B: Prior Art Patents and Printed Publications for the '954 Patent

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7574734 ("Fedronic")	8/11/2009	8/15/2002
US20020124176A1 ("Epstein")	9/5/2005	12/14/1998
US6751733 ("Nakamura")	6/15/2004	6/16/1999
US7481363 ("Zuili")	8/5/2004	12/30/2003
US20060075230A1 ("Baird")	4/6/2006	10/5/2004
US6957337 ("Chainer")	10/18/2005	8/11/1999

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7412603(B2) ("Yeates")	8/12/2008	12/5/2003
US7590861 ("Abdallah")	9/15/2009	8/6/2003
US7961915 ("Davida")	6/14/2011	4/9/2010
US8046589 ("Akkermans")	10/25/2011	6/22/2005
US20100077224A1 ("Milgramm")	3/25/2010	4/23/2002
WO 99/56429 ("Scott")	11/4/1999	4/26/1999
US 2004/0044627 ("Russell")	3/4/2004	11/29/2000
US 2001/0000535 ("Lapsley")	4/26/2001	12/6/2000
US 2003/0177102 ("Robinson")	9/18/2003	2/19/2003
US 2004/0153649 ("Rhoads")	8/5/2004	9/4/2003
US 7239226 ("Berardi")	7/3/2007	7/9/2002
US 6175921 ("Rosen")	1/16/2001	7/16/1997
US 2002/0109580 ("Shreve")	8/15/2002	2/15/2001
US 2003/0055792 ("Kinoshita")	3/20/2003	7/19/2002
US 7188110 ("Ludtke")	3/6/2007	12/11/2000
US 2003/0196084 ("Okereke")	10/16/2003	4/11/2003
US20050050367A1 ("Burger")	3/3/2005	9/30/2004
US 6850147 B2 ("Prokoski")	2/1/2005	4/1/2002
US 7178025 ("Scheidt")	2/13/2007	1/30/2003
US 8751801 B2 ("Harris")	6/10/2014	4/22/2005
US 9979709 B2 ("Abdallah '709")	5/22/2018	9/9/2015
US 6709333 B1 ("Bradford")	3/23/2004	4/14/2003
US 6751733 B1 ("Nakamura")	6/15/2004	6/16/1999
US 7389269 B1 ("Robinson '269")	6/17/2008	5/19/2004
US 7591425 B1 ("Zuili '425")	9/22/2009	7/29/2006
US 7631193 ("Hoffman")	12/8/2009	1/23/2002
US 8260716 B2 ("Hoffman '716")	9/4/2012	12/28/2005
US 7676834 B2 ("Camaisa")	3/9/2010	7/15/2004
US 8200980 B1 ("Robinson '980")	6/12/2012	6/7/2004
US 8499164 B2 ("Ortiz")	7/30/2013	2/25/2011
US 2003/0005326A1 ("Flemming")	1/2/2003	6/29/2001
US 2004/0187018 A1 ("Owen")	5/13/2008	10/9/2001
US 2009/0172812 A1 ("Mercredi")	7/2/2009	3/10/2009
US 2018/0309750 A1 ("Johnson")	10/25/2018	2/6/2018
US 6363485 ("Adams")	3/26/2003	9/9/1998
US 6983882 B2 ("Cassone")	1/10/2006	3/31/2003
US 7427019 B2 ("Haertel")	9/23/2008	8/25/2005
US 8004491 B2 ("Maynard")	8/23/2011	4/11/2007
US 8622842 B2 ("Nguyen")	1/7/2014	9/11/2012
US 11232670 B2 ("Cipriano")	1/25/2022	6/26/2020
US 2004/0030894 A1 ("Labrou")	4/1/2008	6/11/2003
US 2005/0033702 A1 ("Holdsworth")	2/10/2005	1/16/2003
US 2005/0193198 A1 ("Livowsky")	9/1/2005	1/27/2005

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US 2006/0016877 A1 (“Bonalle”)	1/15/2008	7/1/2004
US 2006/0106605 A1 (“Saunders”)	5/18/2006	11/12/2004
US 2007/0021141 A1 (“Yokota”)	1/25/2007	10/5/2004
US 2017/0286955 A1 (“Moskowitz”)	10/5/2017	6/12/2017
US 2020/0228526 A1 (“Milgramm”)	7/16/2020	3/30/2020
US 6819219 B1 (“Bolle”)	11/16/2004	10/13/2000
US 2003/0074317 A1 (“Hofi”)	4/17/2003	10/15/2001
US 2003/0120934 A1 (“Ortiz”)	6/26/2003	12/17/2002
US 6353889 B1 (“Hollingshead”)	3/5/2002	5/13/1998
US 2003/0220876 A1 (“Burger”)	11/27/2003	3/19/2003
C. Adams, “Internet X.509 Public Key Infrastructure Certificate Management Protocols”	March 1999	-
P.J. Skevington, “Trusted third parties in electronic commerce”	April 1997	-
D. Spinellis, “Trusted Third Party Services for Deploying Secure Telemedical Applications over the WWW”	1999	-

Table 2-B: Prior Art Systems and Inventions for the '954 Patent

Name of System or Invention⁵⁷	Date of Sale / Offer for Sale / Public Use / Known by Others
AuthenTec FingerLoc System (“AuthenTec”)	1996
Chameleon Network’s Pocket Vault (“Chameleon”)	2004
DigitalPersona U.are.U Pro for Active Directory (“DigitalPersona”)	2000
Microsoft Fingerprint Reader + Windows Server Active Directory (“Microsoft Fingerprint Reader”)	2004
Microsoft Optical Desktop + Windows Server Active Directory (“Microsoft Optical Desktop”)	2004
Microsoft Wireless IntelliMouse + Windows Server Active Directory (“Microsoft Wireless IntelliMouse”)	2004
Ringdale Access Control Systems (“Ringdale”)	2002
Sony Puppy Fingerprint Identity Device (“Sony Puppy FIU”)	2004
UPEK TouchChip Trusted Fingerprint Module (“UPEK”)	2004
WS-Federation	2004

⁵⁷ “System” includes any relevant combination of hardware and/or software including, without limitation, computers, mobile phones and tablets, biometric scanners, smartcards, RFID systems, location trackers, etc

Name of System or Invention⁵⁷	Date of Sale / Offer for Sale / Public Use / Known by Others
WS-Trust	2004
Indigo	2003
The Pocket Vault System (“Pocket Vault”)	2004
The RWKLB575 System (“RWKLB575”)	2003

Table 3-B: Charts for the ’954 Patent

Exhibit No.	Prior Art Reference/System
B1	Fedronic
B2	Scott
B3	Berardi
B4	Ludtke
B5	Robinson
B6	Abdallah
B7	Burger
B8	Akkermans
B9	Baird
B10	AuthenTec
B11	Chameleon
B12	DigitalPersona
B13	Microsoft Fingerprint Reader
B14	Microsoft Optical Desktop
B15	Microsoft Wireless IntelliMouse
B16	Ringdale
B17	Sony Puppy FIU
B18	UPEK
B19	Bolle
B20	Hofi
B21	Ortiz
B22	Pocket Vault
B23	RWKLB575

For each of the prior art devices identified above, Microsoft has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Microsoft has obtained or is in the process of attempting to obtain the identified devices and will make them available for inspection to the extent they are

obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Microsoft is actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-B.

Discovery is ongoing, and Microsoft may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Microsoft reserves the right to supplement these contentions accordingly. Microsoft continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Microsoft's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '954 Patent. Microsoft's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the

third-party prior art systems anticipate or render obvious the Asserted Claims of the '954 Patent. As such, Microsoft reserves all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the '954 Patent. Microsoft has obtained, and is in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Microsoft reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Microsoft reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Microsoft will make all such devices, software programs, or other products in Microsoft's possession, custody, or control available for inspection by Plaintiff.

Consequently, Microsoft reserves the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Microsoft identifies, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed in Tables 1-B and 2-B as evidence of the state of the art as it relates to user authentication, including but not limited to biometric authentication and biometric processing.

Each of these references show that the concept of biometric authentication is not novel and was well-known for many years before the alleged priority date of the '954 Patent, as discussed in

more detail in Section VI.B (obviousness). In light of the references discussed herein, the Asserted Claims of the '954 Patent cannot be valid.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '954 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Microsoft has not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Microsoft reserves the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

C. U.S. Patent No. 9,298,905

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '905 Patent are provided in attached Exhibits C1 through C23.

Table 1-C: Prior Art Patents and Printed Publications for the '905 Patent

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7574734 ("Fedronic")	8/11/2009	8/15/2002
US20020124176A1 ("Epstein")	9/5/2005	12/14/1998
US6751733 ("Nakamura")	6/15/2004	6/16/1999
US7481363 ("Zuili")	8/5/2004	12/30/2003
US20060075230A1 ("Baird")	4/6/2006	10/5/2004
US6957337 ("Chainer")	10/18/2005	8/11/1999

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7412603(B2) ("Yeates")	8/12/2008	12/5/2003
US7590861 ("Abdallah")	9/15/2009	8/6/2003
US7961915 ("Davida")	6/14/2011	4/9/2010
US8046589 ("Akkermans")	10/25/2011	6/22/2005
US20100077224A1 ("Milgramm")	3/25/2010	4/23/2002
WO 99/56429 ("Scott")	11/4/1999	4/26/1999
US 2004/0044627 ("Russell")	3/4/2004	11/29/2000
US 2001/0000535 ("Lapsley")	4/26/2001	12/6/2000
US 2003/0177102 ("Robinson")	9/18/2003	2/19/2003
US 2004/0153649 ("Rhoads")	8/5/2004	9/4/2003
US 7239226 ("Berardi")	7/3/2007	7/9/2002
US 6175921 ("Rosen")	1/16/2001	7/16/1997
US 2002/0109580 ("Shreve")	8/15/2002	2/15/2001
US 2003/0055792 ("Kinoshita")	3/20/2003	7/19/2002
US 7188110 ("Ludtke")	3/6/2007	12/11/2000
US 2003/0196084 ("Okereke")	10/16/2003	4/11/2003
US20050050367A1 ("Burger")	3/3/2005	9/30/2004
US 6850147 B2 ("Prokoski")	2/1/2005	4/1/2002
US 7178025 ("Scheidt")	2/13/2007	1/30/2003
US 8751801 B2 ("Harris")	6/10/2014	4/22/2005
US 9979709 B2 ("Abdallah '709")	5/22/2018	9/9/2015
US 6709333 B1 ("Bradford")	3/23/2004	4/14/2003
US 6751733 B1 ("Nakamura")	6/15/2004	6/16/1999
US 7389269 B1 ("Robinson '269")	6/17/2008	5/19/2004
US 7591425 B1 ("Zuili '425")	9/22/2009	7/29/2006
US 7631193 ("Hoffman")	12/8/2009	1/23/2002
US 8260716 B2 ("Hoffman '716")	9/4/2012	12/28/2005
US 7676834 B2 ("Camaisa")	3/9/2010	7/15/2004
US 8200980 B1 ("Robinson '980")	6/12/2012	6/7/2004
US 8499164 B2 ("Ortiz")	7/30/2013	2/25/2011
US 2003/0005326A1 ("Flemming")	1/2/2003	6/29/2001
US 2004/0187018 A1 ("Owen")	5/13/2008	10/9/2001
US 2009/0172812 A1 ("Mercredi")	7/2/2009	3/10/2009
US 2018/0309750 A1 ("Johnson")	10/25/2018	2/6/2018
US 6363485 ("Adams")	3/26/2003	9/9/1998
US 6983882 B2 ("Cassone")	1/10/2006	3/31/2003
US 7427019 B2 ("Haertel")	9/23/2008	8/25/2005
US 8004491 B2 ("Maynard")	8/23/2011	4/11/2007
US 8622842 B2 ("Nguyen")	1/7/2014	9/11/2012
US 11232670 B2 ("Cipriano")	1/25/2022	6/26/2020
US 2004/0030894 A1 ("Labrou")	4/1/2008	6/11/2003
US 2005/0033702 A1 ("Holdsworth")	2/10/2005	1/16/2003
US 2005/0193198 A1 ("Livowsky")	9/1/2005	1/27/2005

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US 2006/0016877 A1 (“Bonalle”)	1/15/2008	7/1/2004
US 2006/0106605 A1 (“Saunders”)	5/18/2006	11/12/2004
US 2007/0021141 A1 (“Yokota”)	1/25/2007	10/5/2004
US 2017/0286955 A1 (“Moskowitz”)	10/5/2017	6/12/2017
US 2020/0228526 A1 (“Milgramm”)	7/16/2020	3/30/2020
US 6819219 B1 (“Bolle”)	11/16/2004	10/13/2000
US 2003/0074317 A1 (“Hofi”)	4/17/2003	10/15/2001
US 2003/0120934 A1 (“Ortiz”)	6/26/2003	12/17/2002
US 6353889 B1 (“Hollingshead”)	3/5/2002	5/13/1998
US 2003/0220876 A1 (“Burger”)	11/27/2003	3/19/2003
C. Adams, “Internet X.509 Public Key Infrastructure Certificate Management Protocols”	March 1999	-
P.J. Skevington, “Trusted third parties in electronic commerce”	April 1997	-
D. Spinellis, “Trusted Third Party Services for Deploying Secure Telemedical Applications over the WWW”	1999	-

Table 2-C: Prior Art Systems and Inventions for the '905 Patent

Name of System or Invention⁵⁸	Date of Sale / Offer for Sale / Public Use / Known by Others
AuthenTec FingerLoc System (“AuthenTec”)	1996
Chameleon Network’s Pocket Vault (“Chameleon”)	2004
DigitalPersona U.are.U Pro for Active Directory (“DigitalPersona”)	2000
Microsoft Fingerprint Reader + Windows Server Active Directory (“Microsoft Fingerprint Reader”)	2004
Microsoft Optical Desktop + Windows Server Active Directory (“Microsoft Optical Desktop”)	2004
Microsoft Wireless IntelliMouse + Windows Server Active Directory (“Microsoft Wireless IntelliMouse”)	2004
Ringdale Access Control Systems (“Ringdale”)	2002
Sony Puppy Fingerprint Identity Device (“Sony Puppy FIU”)	2004
UPEK TouchChip Trusted Fingerprint Module (“UPEK”)	2004
WS-Federation	2004

⁵⁸ “System” includes any relevant combination of hardware and/or software including, without limitation, computers, mobile phones and tablets, biometric scanners, smartcards, RFID systems, location trackers, etc

Name of System or Invention⁵⁸	Date of Sale / Offer for Sale / Public Use / Known by Others
WS-Trust	2004
Indigo	2003
The Pocket Vault System (“Pocket Vault”)	2004
The RWKLB575 System (“RWKLB575”)	2003

Table 3-C: Charts for the ’905 Patent

Exhibit No.	Prior Art Reference/System
C1	Fedronic
C2	Scott
C3	Berardi
C4	Ludtke
C5	Robinson
C6	Abdallah
C7	Burger
C8	Akkermans
C9	Baird
C10	AuthenTec
C11	Chameleon
C12	DigitalPersona
C13	Microsoft Fingerprint Reader
C14	Microsoft Optical Desktop
C15	Microsoft Wireless IntelliMouse
C16	Ringdale
C17	Sony Puppy FIU
C18	UPEK
C19	Bolle
C20	Hofi
C21	Ortiz
C22	Pocket Vault
C23	RWKLB575

For each of the prior art devices identified above, Microsoft has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Microsoft has obtained or is in the process of attempting to obtain the identified devices and will make them available for inspection to the extent they are

obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Microsoft is actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-C.

Discovery is ongoing, and Microsoft may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Microsoft reserves the right to supplement these contentions accordingly. Microsoft continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Microsoft's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '905 Patent. Microsoft's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the

third-party prior art systems anticipate or render obvious the Asserted Claims of the '905 Patent. As such, Microsoft reserves all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the '905 Patent. Microsoft has obtained, and is in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Microsoft reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Microsoft reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Microsoft will make all such devices, software programs, or other products in Microsoft's possession, custody, or control available for inspection by Plaintiff.

Consequently, Microsoft reserves the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Microsoft identifies, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed in Tables 1-C and 2-C as evidence of the state of the art as it relates to user authentication, including but not limited to biometric authentication and biometric processing.

Each of these references show that the concept of biometric authentication is not novel and was well-known for many years before the alleged priority date of the '905 Patent, as discussed in

more detail in Section VI.B (obviousness). In light of the references discussed herein, the Asserted Claims of the '905 Patent cannot be valid.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '905 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Microsoft has not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Microsoft reserves the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

D. U.S. Patent No. 8,646,042

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '042 Patent are provided in attached Exhibits D1 through D20.

Table 1-D: Prior Art Patents and Printed Publications for the '042 Patent

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7597250 ("Finn")	10/6/2009	5/27/2006
US20090143104A1 ("Loh")	6/4/2009	9/19/2008
US8872619 ("Berardi '619")	10/28/2014	5/3/2007
US7303120 ("Beenau")	12/4/2007	3/26/2004
US7471199 ("Zimmerman")	12/30/2008	1/10/2005
US 2007/0245157 ("Giobbi '157")	10/18/2007	5/5/2007

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US 2004/0255139A1 (“Giobbi ’139”)	12/16/2004	5/17/2004
US 9042819 (“Dua”)	5/26/2015	9/30/2014
EP 1536306A1 (“Broadcom”)	6/1/2005	9/30/2004
US7392943B2 (“Rietveld”)	7/1/2008	4/3/2007
US 6353889 B1 (“Hollingshead”)	3/5/2002	5/13/1998
US 2003/0220876 A1 (“Burger”)	11/27/2003	3/19/2003

Table 2-D: Prior Art Systems and Inventions for the ’042 Patent

Name of System or Invention⁵⁹	Date of Sale / Offer for Sale / Public Use / Known by Others
AuthenTec FingerLoc System (“AuthenTec”)	1996
Chameleon Network’s Pocket Vault (“Chameleon”)	2004
DigitalPersona U.are.U Pro for Active Directory (“DigitalPersona”)	2000
Microsoft Fingerprint Reader + Windows Server Active Directory (“Microsoft Fingerprint Reader”)	2004
Microsoft Optical Desktop + Windows Server Active Directory (“Microsoft Optical Desktop”)	2004
Microsoft Wireless IntelliMouse + Windows Server Active Directory (“Microsoft Wireless IntelliMouse”)	2004
Ringdale Access Control Systems (“Ringdale”)	2002
Sony Puppy Fingerprint Identity Device (“Sony Puppy FIU”)	2004
UPEK TouchChip Trusted Fingerprint Module (“UPEK”)	2004
Gemalto Chip Authentication Program (“Gemalto Chip”)	2002
Mastercard Chip Authentication Program (“Mastercard Chip”)	2004
Visa Dynamic Passcode Authentication (“Visa DP”)	2006
Barclays Pinsentry (“Pinsentry”)	2007
Microsoft Infocard (“Infocard”)	2006
WS-Federation	2004
WS-Trust	2004
Indigo	2003
Windows Communication Foundation	2006
Windows Identification Foundation	2007
The Pocket Vault System (“Pocket Vault”)	2004

⁵⁹ “System” includes any relevant combination of hardware and/or software including, without limitation, computers, mobile phones and tablets, biometric scanners, smartcards, RFID systems, location trackers, etc

Name of System or Invention⁵⁹	Date of Sale / Offer for Sale / Public Use / Known by Others
The RWKLB575 System (“RWKLB575”)	2003

Table 3-D: Charts for the ’042 Patent

Exhibit No.	Prior Art Reference/System
D1	Berardi ’619
D2	Beenau
D3	Zimmerman
D4	Giobbi ’157
D5	Giobbi ’139
D6	Broadcom
D7	Finn
D8	Loh
D9	Rietveld
D10	AuthenTec
D11	Chameleon
D12	DigitalPersona
D13	Microsoft Fingerprint Reader
D14	Microsoft Optical Desktop
D15	Microsoft Wireless IntelliMouse
D16	Ringdale
D17	Sony Puppy FIU
D18	UPEK
D19	Pocket Vault
D20	RWKLB575

For each of the prior art devices identified above, Microsoft has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Microsoft has obtained or is in the process of attempting to obtain the identified devices and will make them available for inspection to the extent they are obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art

publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Microsoft is actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-D.

Discovery is ongoing, and Microsoft may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Microsoft reserves the right to supplement these contentions accordingly. Microsoft continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Microsoft's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '042 Patent. Microsoft's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third-party prior art systems anticipate or render obvious the Asserted Claims of the '042 Patent. As such, Microsoft reserves all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the

Asserted Claims of the '042 Patent. Microsoft has obtained, and is in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Microsoft reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Microsoft reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Microsoft will make all such devices, software programs, or other products in Microsoft's possession, custody, or control available for inspection by Plaintiff.

Consequently, Microsoft reserves the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Microsoft identifies, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed in Tables 1-D and 2-D as evidence of the state of the art as it relates to user authentication, personal digital keys, hybrid device authorization, proximity sensors, and/or location tracking.

Each of these references show that the concepts of user authentication, proximity sensors, and location tracking are not novel and were well-known for many years before the alleged priority date of the '042 Patent, as discussed in more detail in Section VI.B (obviousness). In light of the references discussed herein, the Asserted Claims of the '042 Patent cannot be valid.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for

products) before either the earliest claimed priority date of the '042 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Microsoft has not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Microsoft reserves the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

E. U.S. Patent No. 9,679,289

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '289 Patent are provided in attached Exhibits E1 through E20.

Table 1-E: Prior Art Patents and Printed Publications for the '289 Patent

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7597250 ("Finn")	10/6/2009	5/27/2006
US20090143104A1 ("Loh")	6/4/2009	9/19/2008
US8872619 ("Berardi '619")	10/28/2014	5/3/2007
US7303120 ("Beenau")	12/4/2007	3/26/2004
US7471199 ("Zimmerman")	12/30/2008	1/10/2005
US 2007/0245157 ("Giobbi '157")	10/18/2007	5/5/2007
US 2004/0255139A1 ("Giobbi '139")	12/16/2004	5/17/2004
US 9042819 ("Dua")	5/26/2015	9/30/2014
EP 1536306A1 ("Broadcom")	6/1/2005	9/30/2004
US7392943B2 ("Rietveld")	7/1/2008	4/3/2007
US 6353889 B1 ("Hollingshead")	3/5/2002	5/13/1998
US 2003/0220876 A1 ("Burger")	11/27/2003	3/19/2003

Table 2-E: Prior Art Systems and Inventions for the '289 Patent

Name of System or Invention⁶⁰	Date of Sale / Offer for Sale / Public Use / Known by Others
AuthenTec FingerLoc System ("AuthenTec")	1996
Chameleon Network's Pocket Vault ("Chameleon")	2004
DigitalPersona U.are.U Pro for Active Directory ("DigitalPersona")	2000
Microsoft Fingerprint Reader + Windows Server Active Directory ("Microsoft Fingerprint Reader")	2004
Microsoft Optical Desktop + Windows Server Active Directory ("Microsoft Optical Desktop")	2004
Microsoft Wireless IntelliMouse + Windows Server Active Directory ("Microsoft Wireless IntelliMouse")	2004
Ringdale Access Control Systems ("Ringdale")	2002
Sony Puppy Fingerprint Identity Device ("Sony Puppy FIU")	2004
UPEK TouchChip Trusted Fingerprint Module ("UPEK")	2004
Gemalto Chip Authentication Program ("Gemalto Chip")	2002
Mastercard Chip Authentication Program ("Mastercard Chip")	2004
Visa Dynamic Passcode Authentication ("Visa DP")	2006
Barclays Pinsentry ("Pinsentry")	2007
Microsoft Infocard ("Infocard")	2006
WS-Federation	2004
WS-Trust	2004
Indigo	2003
Windows Communication Foundation	2006
Windows Identification Foundation	2007
The Pocket Vault System ("Pocket Vault")	2004
The RWKLB575 System ("RWKLB575")	2003

Table 3-E: Charts for the '289 Patent

Exhibit No.	Prior Art Reference/System
E1	Berardi '619
E2	Beenau
E3	Zimmerman

⁶⁰ "System" includes any relevant combination of hardware and/or software including, without limitation, computers, mobile phones and tablets, biometric scanners, smartcards, RFID systems, location trackers, etc.

Exhibit No.	Prior Art Reference/System
E4	Giobbi '157
E5	Giobbi '139
E6	Broadcom
E7	Finn
E8	Loh
E9	Rietveld
E10	AuthenTec
E11	Chameleon
E12	DigitalPersona
E13	Microsoft Fingerprint Reader
E14	Microsoft Optical Desktop
E15	Microsoft Wireless IntelliMouse
E16	Ringdale
E17	Sony Puppy FIU
E18	UPEK
E19	Pocket Vault
E20	RWKL575

For each of the prior art devices identified above, Microsoft has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Microsoft has obtained or is in the process of attempting to obtain the identified devices and will make them available for inspection to the extent they are obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Microsoft is actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-E.

Discovery is ongoing, and Microsoft may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and

Microsoft reserves the right to supplement these contentions accordingly. Microsoft continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Microsoft's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '289 Patent. Microsoft's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third-party prior art systems anticipate or render obvious the Asserted Claims of the '289 Patent. As such, Microsoft reserves all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the '289 Patent. Microsoft has obtained, and is in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery

during this lawsuit, which Microsoft reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Microsoft reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Microsoft will make all such devices, software programs, or other products in Microsoft's possession, custody, or control available for inspection by Plaintiff.

Consequently, Microsoft reserves the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Microsoft identifies, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed in Tables 1-E and 2-E as evidence of the state of the art as it relates to user authentication, personal digital keys, hybrid device authorization, proximity sensors, and/or location tracking.

Each of these references show that the concepts of user authentication, proximity sensors, and location tracking are not novel and were well-known for many years before the alleged priority date of the '289 Patent, as discussed in more detail in Section VI.B (obviousness). In light of the references discussed herein, the Asserted Claims of the '289 Patent cannot be valid.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '289 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Microsoft has not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Microsoft reserves the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

F. U.S. Patent No. 10,073,960

Invalidity claim charts identifying disclosures in the references identified in the tables below as to the Asserted Claims of the '960 Patent are provided in attached Exhibits F1 through F20.

Table 1-F: Prior Art Patents and Printed Publications for the '960 Patent

Patent No. or Title (Primary Inventor/Author)	Date of Issue/ Publication	Filing Date
US7597250 ("Finn")	10/6/2009	5/27/2006
US20090143104A1 ("Loh")	6/4/2009	9/19/2008
US8872619 ("Berardi '619")	10/28/2014	5/3/2007
US7303120 ("Beenau")	12/4/2007	3/26/2004
US7471199 ("Zimmerman")	12/30/2008	1/10/2005
US 2007/0245157 ("Giobbi '157")	10/18/2007	5/5/2007
US 2004/0255139A1 ("Giobbi '139")	12/16/2004	5/17/2004
US 9042819 ("Dua")	5/26/2015	9/30/2014
EP 1536360A1 ("Broadcom")	6/1/2005	9/30/2004
US7392943B2 ("Rietveld")	7/1/2008	4/3/2007
US 6353889 B1 ("Hollingshead")	3/5/2002	5/13/1998
US 2003/0220876 A1 ("Burger")	11/27/2003	3/19/2003

Table 2-F: Prior Art Systems and Inventions for the '960 Patent

Name of System or Invention⁶¹	Date of Sale / Offer for Sale / Public Use / Known by Others
DigitalPersona U.are.U Pro for Active Directory	2000
AuthenTec FingerLoc System ("AuthenTec")	1996
Chameleon Network's Pocket Vault ("Chameleon")	2004
DigitalPersona U.are.U Pro for Active Directory ("DigitalPersona")	2000

⁶¹ "System" includes any relevant combination of hardware and/or software including, without limitation, computers, mobile phones and tablets, biometric scanners, smartcards, RFID systems, location trackers, etc.

Name of System or Invention⁶¹	Date of Sale / Offer for Sale / Public Use / Known by Others
Microsoft Fingerprint Reader + Windows Server Active Directory (“Microsoft Fingerprint Reader”)	2004
Microsoft Optical Desktop + Windows Server Active Directory (“Microsoft Optical Desktop”)	2004
Microsoft Wireless IntelliMouse + Windows Server Active Directory (“Microsoft Wireless IntelliMouse”)	2004
Ringdale Access Control Systems (“Ringdale”)	2002
Sony Puppy Fingerprint Identity Device (“Sony Puppy FIU”)	2004
UPEK TouchChip Trusted Fingerprint Module (“UPEK”)	2004
Gemalto Chip Authentication Program (“Gemalto Chip”)	2002
Mastercard Chip Authentication Program (“Mastercard Chip”)	2004
Visa Dynamic Passcode Authentication (“Visa DP”)	2006
Barclays Pinsentry (“Pinsentry”)	2007
Microsoft Infocard (“Infocard”)	2006
WS-Federation	2004
WS-Trust	2004
Indigo	2003
Windows Communication Foundation	2006
Windows Identification Foundation	2007
The Pocket Vault System (“Pocket Vault”)	2004
The RWKLB575 System (“RWKLB575”)	2003

Table 3-F: Charts for the ’960 Patent

Exhibit No.	Prior Art Reference/System
F1	Berardi ’619
F2	Beenau
F3	Zimmerman
F4	Giobbi ’157
F5	Giobbi ’139
F6	Broadcom
F7	Finn
F8	Loh
F9	Rietveld
F10	AuthenTec
F11	Chameleon
F12	DigitalPersona
F13	Microsoft Fingerprint Reader
F14	Microsoft Optical Desktop

Exhibit No.	Prior Art Reference/System
F15	Microsoft Wireless IntelliMouse
F16	Ringdale
F17	Sony Puppy FIU
F18	UPEK
F19	Pocket Vault
F20	RWKL575

For each of the prior art devices identified above, Microsoft has listed and produced documents as evidence of the relevant features and functionality to the extent that they are presently available and have been located. Microsoft has obtained or is in the process of attempting to obtain the identified devices and will make them available for inspection to the extent they are obtained. To the extent that one or more documents (*e.g.*, user manual) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Further, Microsoft is actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-F.

Discovery is ongoing, and Microsoft may serve third parties with document subpoenas. One or more of these devices, along with related documentation, may be invalidating, and Microsoft reserves the right to supplement these contentions accordingly. Microsoft continues to investigate each of the identified devices, including through potential discovery needed to be obtained via third party subpoenas, and reserve the right to supplement these contentions and accompanying claim charts after further investigation.

Microsoft's reference to a particular product, device, or software program in these contentions should be interpreted as a reference to the system itself as well as to any corresponding patents, publications, or product literature relating to the cited system. Upon information and

belief, the systems were publicly disclosed, used, sold, or offered for sale in the United States before the alleged priority date of the Asserted Claims of the '960 Patent. Microsoft's investigation of such prior art systems is still ongoing and discovery has not yet been received from third parties who may have information concerning such prior art systems. Accordingly, subsequent discovery may reveal information that affects the disclosures and contentions herein. For example, subsequent discovery may provide additional information regarding whether or not any of the third-party prior art systems anticipate or render obvious the Asserted Claims of the '960 Patent. As such, Microsoft reserves all rights to supplement their invalidity contentions.

Many of the inventive, research, design, and development activities concerning these systems and technologies occurred in the United States before the alleged priority date of the Asserted Claims of the '960 Patent. Microsoft has obtained, and is in the process of obtaining, additional information regarding the dates by which the cited products and services were publicly disclosed, used, sold, or offered for sale, the circumstances under which the research, design, and development activities were conducted, and the identities of the particular individuals involved in such activities through publicly available patents, publications, and product literature. The actual dates, circumstances, and identities of individuals will be the subject of third party discovery during this lawsuit, which Microsoft reserves the right to rely upon to corroborate the prior art status of the prior art identified herein. Microsoft reserves the right to modify, amend, or supplement these contentions if additional information becomes available during the course of this lawsuit. Furthermore, Microsoft will make all such devices, software programs, or other products in Microsoft's possession, custody, or control available for inspection by Plaintiff.

Consequently, Microsoft reserves the right to amend, modify, or supplement these Invalidity Contentions should additional information become available to them through discovery.

In addition, Microsoft identifies, responsive to Plaintiff's Infringement Contentions, the patents, publications, and/or systems listed in Tables 1-F and 2-F as evidence of the state of the art as it relates to user authentication, personal digital keys, hybrid device authorization, proximity sensors, and/or location tracking.

Each of these references show that the concepts of user authentication, proximity sensors, and location tracking are not novel and were well-known for many years before the alleged priority date of the '960 Patent, as discussed in more detail in Section VI.B (obviousness). In light of the references discussed herein, the Asserted Claims of the '960 Patent cannot be valid.

Each prior art patent, publication, or product identified above was either effectively filed or issued (for patents), published (for publications) or known, used, offered for sale or sold (for products) before either the earliest claimed priority date of the '960 Patent to which it is applied for invalidity, and none appears to have been abandoned, suppressed, or concealed, so each such reference also constitutes evidence of prior invention pursuant to 35 U.S.C. § 102(g), if it is in the U.S. The persons or entities involved with each such invention include the named inventors on the above-identified patents, the authors listed on the above-identified publications, and the entities and individuals identified in connection with the above-identified products.

Because Microsoft has not yet completed discovery in this case, including taking depositions of the named inventors, and otherwise obtaining discovery from Plaintiff and third parties, Microsoft reserves the right to supplement these contentions with facts, documents, or other information learned at a later point through discovery or further investigation.

V. PRIORITY DATE

A. U.S. Patent No. 8,352,730

In its Infringement Contentions, Proxense argues that the asserted claims of the '730 Patent are entitled to a priority date of at least the filing date of its provisional application, US Patent Application Nos. 60/637,538, which was filed December 20, 2004.

Defendants do not agree, and therefore dispute, that the '730 Patent asserted claims are entitled to the priority date asserted by Proxense. For example, US Patent Application Nos. 60/637,538 does not include written description of the alleged invention sufficient to enable any person skilled in the art to make method for verifying a user during authentication of an integrated device, comprising “persistently storing biometric data of the user and a plurality of codes and other data values comprising a device ID code uniquely identifying the integrated device and a secret decryption value in a tamper proof format written to a storage element on the integrated device that is unable to be subsequently altered; wherein the biometric data is selected from a group consisting of a palm print, a retinal scan, an iris scan, a hand geometry, a facial recognition, a signature recognition and a voice recognition;” “responsive to receiving a request for a biometric verification of the user, receiving scan data from a biometric scan;” “comparing the scan data to the biometric data to determine whether the scan data matches the biometric data;” “responsive to a determination that the scan data matches the biometric data, wirelessly sending one or more codes from the plurality of codes and the other data values for authentication by an agent that is a third-party trusted authority possessing a list of device ID codes uniquely identifying legitimate integrated devices, wherein the one or more codes and other data values includes the device ID code;” and “responsive to authentication of the one or more codes and the other data values by the agent, receiving an access message from the agent allowing the user access to an application, wherein the application is selected from a group consisting of a casino machine, a keyless lock, a

garage door opener, an ATM machine, a hard drive, computer software, a web site and a file.” as set forth at claim 1 of the ’730 Patent. These limitations are simply not present, and Proxense has not identified any bases for these limitations being found in the earlier application. Further, Proxense failed to produce the US Patent Application Nos. 60/637,538 to which it claims priority.

The ’730 Patent is therefore not entitled to the claimed priority date of December 20, 2004. The correct and legally-applicable priority date of the ’730 Patent is instead its filing date, April 12, 2012.

B. U.S. Patent No. 8,886,954

In its Infringement Contentions, Proxense argues that the asserted claims of the ’954 Patent are entitled to a priority date of at least the filing date of its provisional application, US Patent Application Nos. 60/637,538, which was filed December 20, 2004.

Defendants do not agree, and therefore dispute, that the ’954 Patent asserted claims are entitled to the priority date asserted by Proxense. For example, US Patent Application Nos. 60/637,538 does not include written description of the alleged invention sufficient to enable any person skilled in the art to make method, comprising “persistently storing biometric data of a user and a plurality of codes and other data values comprising a device ID code uniquely identifying an integrated device and a secret decryption value in a tamper proof format written to a storage element on the integrated device that is not capable of being subsequently altered;” “responsive to receiving a request for a biometric verification of the user, receiving scan data from a biometric scan;” “comparing the scan data to the biometric data to determine whether the scan data matches the biometric data;” and “receiving, at an application, an access message from the trusted authority indicating that the trusted authority successfully authenticated the one or more codes and other data values sent to the third party and allowing the user access to the application” as set forth at claim 1 of the ’954 Patent. These limitations are simply not present, and Proxense has not

identified any bases for these limitations being found in the earlier application. Further, Proxense failed to produce the US Patent Application Nos. 60/637,538 to which it claims priority.

The '954 Patent is therefore not entitled to the claimed priority date of December 20, 2004. The correct and legally-applicable priority date of the '954 Patent is instead its filing date, December 10, 2012.

C. U.S. Patent No. 9,298,905

In its Infringement Contentions, Proxense argues that the asserted claims of the '905 Patent are entitled to a priority date of at least the filing date of its provisional application, US Patent Application Nos. 60/637,538, which was filed December 20, 2004.

Defendants do not agree, and therefore dispute, that the '905 Patent asserted claims are entitled to the priority date asserted by Proxense. For example, US Patent Application Nos. 60/637,538 does not include written description of the alleged invention sufficient to enable any person skilled in the art to make method, comprising “persistently storing biometric data of a legitimate user and an ID code on an integrated device;” “responsive to receiving a request for a biometric verification of a user, receiving, from a biometric sensor, scan data from a biometric scan performed by the biometric sensor;” “comparing the scan data to the biometric data to determine whether the scan data matches the biometric data;” “responsive to a determination that the scan data matches the biometric data, wirelessly sending the ID code for comparison by a third-party trusted authority against one or more previously registered ID codes maintained by the third-party trusted authority;” and “responsive to receiving an access message from the third-party trusted authority-indicating that the third-party trusted authority successfully authenticated the ID code, allowing the user to complete a financial transaction” as set forth at claim 1 of the '905 Patent. These limitations are simply not present, and Proxense has not identified any bases for

these limitations being found in the earlier application. Further, Proxense failed to produce the US Patent Application Nos. 60/637,538 to which it claims priority.

The '905 Patent is therefore not entitled to the claimed priority date of December 20, 2004. The correct and legally-applicable priority date of the '905 Patent is instead its filing date, October 23, 2014.

D. U.S. Patent No. 8,646,042

In its Infringement Contentions, Proxense argues that the asserted claims of the '042 Patent are entitled to a priority date of at least the filing date of its provisional application, US Patent Application Nos. 60/992,953, which was filed December 6, 2007.

Defendants do not agree, and therefore dispute, that the '042 Patent asserted claims are entitled to the priority date asserted by Proxense. For example, US Patent Application Nos. 60/637,538 does not include written description of the alleged invention sufficient to enable any person skilled in the art to make a method comprising “creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external personal digital key (PDK), the hybrid device including an integrated PDK and the integrated RDC;” “receiving a first signal at the integrated RDC via the first wireless link from the external PDK;” “generating an enablement signal enabling one or more of an application, a function and a service on one or more of the hybrid device and a device associated with an external RDC;” and “sending the enablement signal to one or more of the hybrid device and the device associated with an external RDC” as set forth at claim 10 of the '042 Patent. These limitations are simply not present, and Proxense has not identified any bases for these limitations being found in the earlier application. Further, Proxense failed to produce the US Patent Application Nos. 60/637,538 to which it claims priority.

The '042 Patent is therefore not entitled to the claimed priority date of December 6, 2007. The correct and legally-applicable priority date of the '042 Patent is instead its filing date, April 12, 2012.

E. U.S. Patent No. 9,679,289

In its Infringement Contentions, Proxense argues that the asserted claims of the '289 Patent are entitled to a priority date of at least the filing date of its provisional application, US Patent Application Nos. 60/992,953, which was filed December 6, 2007.

Defendants do not agree, and therefore dispute, that the '289 Patent asserted claims are entitled to the priority date asserted by Proxense. For example, US Patent Application Nos. 60/637,538 does not include written description of the alleged invention sufficient to enable any person skilled in the art to make a method comprising “creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external device, the hybrid device including an integrated, secure memory and the integrated RDC, wherein the integrated, secure memory stores local, secured information;” “receiving a first signal, at the integrated RDC, via the first wireless link, from the external device;” and “generating an enablement signal enabling one or more of an application, a function and a service” as set forth at claim 14 of the '289 Patent. These limitations are simply not present, and Proxense has not identified any bases for these limitations being found in the earlier application. Further, Proxense failed to produce the US Patent Application Nos. 60/637,538 to which it claims priority.

The '289 Patent is therefore not entitled to the claimed priority date of December 6, 2007. The correct and legally-applicable priority of the '289 Patent is instead its filing date, December 7, 2015.

F. U.S. Patent No. 10,073,960

In its Infringement Contentions, Proxense argues that the asserted claims of the '960 Patent are entitled to a priority date of at least the filing date of its provisional application, US Patent Application Nos. 60/992,953, which was filed December 6, 2007.

Defendants do not agree, and therefore dispute, that the '960 Patent asserted claims are entitled to the priority date asserted by Proxense. For example, US Patent Application Nos. 60/637,538 does not include written description of the alleged invention sufficient to enable any person skilled in the art to make a method comprising “creating a first wireless link between an integrated, wireless communication interface of a device and an external device, the device including a battery, an integrated, secure memory, and the integrated, wireless communication interface, wherein the integrated, secure memory stores local, secured information and the integrated, wireless communication interface is powered by the battery;” “receiving a first signal, at the integrated RDC, via the first wireless link, from the external device;” and “generating an enablement signal enabling one or more of an application, a function and a service” as set forth at claim 14 of the '960 Patent. These limitations are simply not present, and Proxense has not identified any bases for these limitations being found in the earlier application. Further, Proxense failed to produce the US Patent Application Nos. 60/637,538 to which it claims priority.

The '960 Patent is therefore not entitled to the claimed priority date of December 6, 2007. The correct and legally-applicable priority of the '960 Patent is instead its filing date, May 15, 2017.

VI. INVALIDITY UNDER 35 U.S.C. §§ 102 AND 103

Microsoft contends that certain prior art references below anticipate one or more Asserted Claims and that to the extent the identified prior art references do not anticipate the Asserted Claims, those claims are invalid as obvious under 35 U.S.C. §103. Each anticipatory prior art

reference, either alone or in combination with other prior art, also renders the Asserted Claims invalid as obvious. In particular, each anticipatory prior art reference may be combined with (1) information generally known to persons skilled in the art at the time of the alleged invention, and/or (2) any of the other identified prior art references. To the extent that Plaintiff contends that any of the anticipatory prior art fails to disclose one or more limitations of the Asserted Claims, Microsoft contends that any difference between the reference and the corresponding patent claims would have been obvious to one of ordinary skill in the art. Thus, all anticipation charts should be interpreted as both reflecting anticipation by the reference as well as invalidity due to single reference obviousness, to the extent that Plaintiff contends that any limitation is missing.

A. Anticipation

As stated above, Microsoft incorporates by reference all other invalidity contentions related to the Asserted Patents served on or otherwise provided to Plaintiff, whether past or future. Prior art references anticipating the Asserted Claims are provided below. The prior art listed below anticipates the Asserted Claims under the proper construction of the claims and/or under Plaintiff's apparent interpretation of the claims reflected by Plaintiff's Complaint and Infringement Contentions.

1. U.S. Patent No. 8,352,730

The Asserted Claims of the '730 Patent are anticipated and/or rendered obvious by prior art. Microsoft identifies the prior art references that anticipate or render obvious the '730 Patent Asserted Claims in the claim charts of Exhibits A1 through A23 (collectively "Appendix A") which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendix A show how these prior art references teach or suggest each and every element of the '730 Patent Asserted Claims. For each reference or combination of references suggested by each

chart and/or herein, Microsoft indicates whether the prior art renders the claim anticipated and/or obvious.

In addition to contending that the '730 Patent Asserted Claims are invalid in view of the prior art references cited in the claim charts of Appendix A, Microsoft further contends that the '730 Patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102(a), 102(b), and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Microsoft continues to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems. In addition to contending that the '730 Patent Asserted Claims are invalid in view of the explicit disclosures of the prior art references cited in the claim charts of Appendix A, Microsoft further contends that the knowledge of skill evidenced by those references render those claims invalid. Microsoft further contends that, even if a prior art reference does not expressly disclose all limitations as arranged or combined in the same manner as an asserted claim, a skilled artisan reading the reference would at once envisage the claimed arrangement or combination. See, e.g., *Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015).

Microsoft's reference to a particular biometric system, verification/authentication system, software program, device, or product in the claim charts of Appendix A should be interpreted alternatively as both a reference to the product itself and to any corresponding patents, publications, or product literature cited in Appendix A that relates to the cited biometric system, verification/authentication system, software program, device, or product. In addition, Microsoft may rely on other documents or things that have not yet been located to support its contentions

regarding such prior art biometric system(s), verification/authentication system(s) software program(s), device(s) or product(s) that are referenced in the charts.

Microsoft incorporates by reference, as if set forth fully herein, all prior art cited during the prosecution of the '730 Patent, all prior art cited during reexamination proceedings of the '730 Patent, all prior art as described in any future *inter partes* review proceedings of the '730 Patent, and all prior art disclosed during previous litigation proceedings.

Microsoft further identifies and hereby incorporates by reference as if set forth fully herein the prior art references and invalidity contentions as described in any other Proxense Proceedings wherein invalidity contentions have been, or will be, provided regarding the '730 Patent, its foreign counterparts, or any parent or child patent of the '730 Patent. Microsoft reserves the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Microsoft identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, embodiment, or other material, the identification should be understood to include the referenced figure, embodiment, or other material as well. Microsoft's citations to specific statements, figures, or disclosures in a prior art reference are sufficient to put Plaintiff on notice where each element of each asserted claim is found in the prior art. However, it should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To

understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Microsoft therefore reserves the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Microsoft also reserves the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix A.

2. U.S. Patent No. 8,886,954

The Asserted Claims of the '954 Patent are anticipated and/or rendered obvious by prior art. Microsoft identifies the prior art references that anticipate or render obvious the '954 Patent Asserted Claims in the claim charts of Exhibits B1 through B23 (collectively "Appendix B") which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendix B show how these prior art references teach or suggest each and every element of the '954 Patent Asserted Claims. For each reference or combination of references suggested by each chart and/or herein, Microsoft indicates whether the prior art renders the claim anticipated and/or obvious.

In addition to contending that the '954 Patent Asserted Claims are invalid in view of the prior art references cited in the claim charts of Appendix B, Microsoft further contends that the

'954 Patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102(a), 102(b), and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Microsoft continues to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems. In addition to contending that the '954 Patent Asserted Claims are invalid in view of the explicit disclosures of the prior art references cited in the claim charts of Appendix B, Microsoft further contends that the knowledge of skill evidenced by those references render those claims invalid. Microsoft further contends that, even if a prior art reference does not expressly disclose all limitations as arranged or combined in the same manner as an asserted claim, a skilled artisan reading the reference would at once envisage the claimed arrangement or combination. See, e.g., *Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015).

Microsoft's reference to a particular biometric system, verification/authentication system, software program, device, or product in the claim charts of Appendix B should be interpreted alternatively as both a reference to the product itself and to any corresponding patents, publications, or product literature cited in Appendix B that relates to the cited biometric system, verification/authentication system, software program, device, or product. In addition, Microsoft may rely on other documents or things that have not yet been located to support its contentions regarding such prior art biometric system(s), verification/authentication system(s), software program(s), device(s) or product(s) that are referenced in the charts.

Microsoft incorporates by reference, as if set forth fully herein, all prior art cited during the prosecution of the '954 Patent, all prior art cited during reexamination proceedings of the '954

Patent, all prior art as described in any future *inter partes* review proceedings of the '954 Patent, and all prior art disclosed during previous litigation proceedings.

Microsoft further identifies and hereby incorporates by reference as if set forth fully herein the prior art references and invalidity contentions as described in any other Proxense Proceedings wherein invalidity contentions have been, or will be, provided regarding the '954 Patent, its foreign counterparts, or any parent or child patent of the '954 Patent. Microsoft reserves the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Microsoft identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, embodiment, or other material, the identification should be understood to include the referenced figure, embodiment, or other material as well. Microsoft's citations to specific statements, figures, or disclosures in a prior art reference are sufficient to put Plaintiff on notice where each element of each asserted claim is found in the prior art. However, it should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Microsoft therefore reserves the right to rely upon other

unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Microsoft also reserves the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix B.

3. U.S. Patent No. 9,298,905

The Asserted Claims of the '905 Patent are anticipated and/or rendered obvious by prior art. Microsoft identifies the prior art references that anticipate or render obvious the '905 Patent Asserted Claims in the claim charts of Exhibits C1 through C23 (collectively "Appendix C") which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendix C show how these prior art references teach or suggest each and every element of the '905 Patent Asserted Claims. For each reference or combination of references suggested by each chart and/or herein, Microsoft indicates whether the prior art renders the claim anticipated and/or obvious.

In addition to contending that the '905 Patent Asserted Claims are invalid in view of the prior art references cited in the claim charts of Appendix C, Microsoft further contends that the '905 Patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102(a), 102(b), and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Microsoft

continues to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems. In addition to contending that the '905 Patent Asserted Claims are invalid in view of the explicit disclosures of the prior art references cited in the claim charts of Appendix C, Microsoft further contends that the knowledge of skill evidenced by those references render those claims invalid. Microsoft further contends that, even if a prior art reference does not expressly disclose all limitations as arranged or combined in the same manner as an asserted claim, a skilled artisan reading the reference would at once envisage the claimed arrangement or combination. See, e.g., *Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015).

Microsoft's reference to a particular biometric system, verification/authentication system, software program, device, or product in the claim charts of Appendix C should be interpreted alternatively as both a reference to the product itself and to any corresponding patents, publications, or product literature cited in Appendix C that relates to the cited biometric system, verification/authentication system, software program, device, or product. In addition, Microsoft may rely on other documents or things that have not yet been located to support its contentions regarding such prior art biometric system(s), verification/authentication system(s), software program(s), device(s) or product(s) that are referenced in the charts.

Microsoft incorporates by reference, as if set forth fully herein, all prior art cited during the prosecution of the '905 Patent, all prior art cited during reexamination proceedings of the '905 Patent, all prior art as described in any future *inter partes* review proceedings of the '905 Patent, and all prior art disclosed during previous litigation proceedings.

Microsoft further identifies and hereby incorporates by reference as if set forth fully herein the prior art references and invalidity contentions as described in any Other Proxense Proceedings

wherein invalidity contentions have been, or will be, provided regarding the '905 Patent, its foreign counterparts, or any parent or child patent of the '905 Patent. Microsoft reserves the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Microsoft identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, embodiment, or other material, the identification should be understood to include the referenced figure, embodiment, or other material as well. Microsoft's citations to specific statements, figures, or disclosures in a prior art reference are sufficient to put Plaintiff on notice where each element of each asserted claim is found in the prior art. However, it should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Microsoft therefore reserves the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Microsoft also reserves the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining

certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix C.

4. U.S. Patent No. 8,646,042

The Asserted Claims of the '042 Patent are anticipated and/or rendered obvious by prior art. Microsoft identifies the prior art references that anticipate or render obvious the '042 Patent Asserted Claims in the claim charts of Exhibits D1 through D20 (collectively "Appendix D") which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendix D show how these prior art references teach or suggest each and every element of the '042 Patent Asserted Claims. For each reference or combination of references suggested by each chart and/or herein, Microsoft indicates whether the prior art renders the claim anticipated and/or obvious.

In addition to contending that the '042 Patent Asserted Claims are invalid in view of the prior art references cited in the claim charts of Appendix D, Microsoft further contends that the '042 Patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102(a), 102(b), and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Microsoft continues to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems. In addition to contending that the '042 Patent Asserted Claims are invalid in view of the explicit disclosures of the prior art references cited in the claim charts of Appendix D, Microsoft

further contends that the knowledge of skill evidenced by those references render those claims invalid. Microsoft further contends that, even if a prior art reference does not expressly disclose all limitations as arranged or combined in the same manner as an asserted claim, a skilled artisan reading the reference would at once envisage the claimed arrangement or combination. See, e.g., *Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015).

Microsoft's reference to a particular user authentication system, proximity sensor/location tracking system, RFID system, personal digital key system, biometric system, software program, device, or product in the claim charts of Appendix D should be interpreted alternatively as both a reference to the product itself and to any corresponding patents, publications, or product literature cited in Appendix D that relates to the cited user authentication system, proximity sensor/location tracking system, RFID system, personal digital key system, biometric system, device, or product. In addition, Microsoft may rely on other documents or things that have not yet been located to support its contentions regarding such prior art user authentication system(s), proximity sensor/location tracking system(s), RFID system(s), personal digital key system(s), biometric system(s), software program(s), device(s) or product(s) that are referenced in the charts.

Microsoft incorporates by reference, as if set forth fully herein, all prior art cited during the prosecution of the '042 Patent, all prior art cited during reexamination proceedings of the '042 Patent, all prior art as described in any future *inter partes* review proceedings of the '042 Patent, and all prior art disclosed during previous litigation proceedings.

Microsoft further identifies and hereby incorporates by reference as if set forth fully herein the prior art references and invalidity contentions as described in any Other Proxense Proceedings wherein invalidity contentions have been, or will be, provided regarding the '042 Patent, its foreign counterparts, or any parent or child patent of the '042 Patent. Microsoft reserves the right to use

any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Microsoft identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, embodiment, or other material, the identification should be understood to include the referenced figure, embodiment, or other material as well. Microsoft's citations to specific statements, figures, or disclosures in a prior art reference are sufficient to put Plaintiff on notice where each element of each asserted claim is found in the prior art. However, it should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Microsoft therefore reserves the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Microsoft also reserves the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole

would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix D.

5. U.S. Patent No. 9,679,289

The Asserted Claims of the '289 Patent are anticipated and/or rendered obvious by prior art. Microsoft identifies the prior art references that anticipate or render obvious the '289 Patent Asserted Claims in the claim charts of Exhibits E1 through E20 (collectively "Appendix E") which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendix E show how these prior art references teach or suggest each and every element of the '289 Patent Asserted Claims. For each reference or combination of references suggested by each chart and/or herein, Microsoft indicates whether the prior art renders the claim anticipated and/or obvious.

In addition to contending that the '289 Patent Asserted Claims are invalid in view of the prior art references cited in the claim charts of Appendix E, Microsoft further contends that the '289 Patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102(a), 102(b), and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Microsoft continues to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems. In addition to contending that the '289 Patent Asserted Claims are invalid in view of the explicit disclosures of the prior art references cited in the claim charts of Appendix E, Microsoft further contends that the knowledge of skill evidenced by those references render those claims invalid. Microsoft further contends that, even if a prior art reference does not expressly disclose

all limitations as arranged or combined in the same manner as an asserted claim, a skilled artisan reading the reference would at once envisage the claimed arrangement or combination. See, e.g., *Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015).

Microsoft's reference to a particular user authentication system, proximity sensor/location tracking system, RFID system, personal digital key system, biometric system, software program, device, or product in the claim charts of Appendix E should be interpreted alternatively as both a reference to the product itself and to any corresponding patents, publications, or product literature cited in Appendix E that relates to the cited user authentication system, proximity sensor/location tracking system, RFID system, personal digital key system, biometric system, device, or product. In addition, Microsoft may rely on other documents or things that have not yet been located to support its contentions regarding such prior art user authentication system(s), proximity sensor/location tracking system(s), RFID system(s), personal digital key system(s), biometric system(s), software program(s), device(s) or product(s) that are referenced in the charts.

Microsoft incorporates by reference, as if set forth fully herein, all prior art cited during the prosecution of the '289 Patent, all prior art cited during reexamination proceedings of the '289 Patent, all prior art as described in any future *inter partes* review proceedings of the '289 Patent, and all prior art disclosed during previous litigation proceedings.

Microsoft further identifies and hereby incorporates by reference as if set forth fully herein the prior art references and invalidity contentions as described in any Other Proxense Proceedings wherein invalidity contentions have been, or will be, provided regarding the '289 Patent, its foreign counterparts, or any parent or child patent of the '289 Patent. Microsoft reserves the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence

the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Microsoft identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, embodiment, or other material, the identification should be understood to include the referenced figure, embodiment, or other material as well. Microsoft's citations to specific statements, figures, or disclosures in a prior art reference are sufficient to put Plaintiff on notice where each element of each asserted claim is found in the prior art. However, it should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Microsoft therefore reserves the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Microsoft also reserves the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an

Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix E.

6. U.S. Patent No. 10,073,960

The Asserted Claims of the '960 Patent are anticipated and/or rendered obvious by prior art. Microsoft identifies the prior art references that anticipate or render obvious the '960 Patent Asserted Claims in the claim charts of Exhibits F1 through F20 (collectively "Appendix F") which are hereby incorporated by reference as if fully set forth herein. The claim charts of Appendix F show how these prior art references teach or suggest each and every element of the '960 Patent Asserted Claims. For each reference or combination of references suggested by each chart and/or herein, Microsoft indicates whether the prior art renders the claim anticipated and/or obvious.

In addition to contending that the '960 Patent Asserted Claims are invalid in view of the prior art references cited in the claim charts of Appendix F, Microsoft further contends that the '960 Patent Asserted Claims are invalid as anticipated and/or obvious under U.S.C. §§ 102(a), 102(b), and/or 103 in view of public knowledge and uses and/or offers for sale of products and services related to the subject matter of the cited references. As discovery is ongoing, Microsoft continues to investigate these items and to reserve the right to amend or supplement these contentions to include additional information or documents regarding such products and/or systems. In addition to contending that the '960 Patent Asserted Claims are invalid in view of the explicit disclosures of the prior art references cited in the claim charts of Appendix F, Microsoft further contends that the knowledge of skill evidenced by those references render those claims invalid. Microsoft further contends that, even if a prior art reference does not expressly disclose all limitations as arranged or combined in the same manner as an asserted claim, a skilled artisan reading the reference would at once envisage the claimed arrangement or combination. See, e.g., *Kennametal Inc. v. Ingersoll Cutting Tool Co.*, 780 F.3d 1376 (Fed. Cir. 2015).

Microsoft's reference to a particular user authentication system, proximity sensor/location tracking system, RFID system, personal digital key system, biometric system, software program, device, or product in the claim charts of Appendix F should be interpreted alternatively as both a reference to the product itself and to any corresponding patents, publications, or product literature cited in Appendix F that relates to the cited user authentication system, proximity sensor/location tracking system, RFID system, personal digital key system, biometric system, device, or product. In addition, Microsoft may rely on other documents or things that have not yet been located to support its contentions regarding such prior art user authentication system(s), proximity sensor/location tracking system(s), RFID system(s), personal digital key system(s), biometric system(s), software program(s), device(s) or product(s) that are referenced in the charts.

Microsoft incorporates by reference, as if set forth fully herein, all prior art cited during the prosecution of the '960 Patent, all prior art cited during reexamination proceedings of the '960 Patent, all prior art as described in any future *inter partes* review proceedings of the '960 Patent, and all prior art disclosed during previous litigation proceedings.

Microsoft further identifies and hereby incorporates by reference as if set forth fully herein the prior art references and invalidity contentions as described in any Other Proxense Proceedings wherein invalidity contentions have been, or will be, provided regarding the '960 Patent, its foreign counterparts, or any parent or child patent of the '960 Patent. Microsoft reserves the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these lawsuits to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

Where Microsoft identifies a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure, as well as any text relating to the figure in addition to the figure itself. Similarly, where an identified portion of text refers to a figure, embodiment, or other material, the identification should be understood to include the referenced figure, embodiment, or other material as well. Microsoft's citations to specific statements, figures, or disclosures in a prior art reference are sufficient to put Plaintiff on notice where each element of each asserted claim is found in the prior art. However, it should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge. Microsoft therefore reserves the right to rely upon other unidentified portions of the prior art references and on other publications and expert testimony to provide context and to aid understanding and interpretation of the identified portions.

Microsoft also reserves the right to rely upon other portions of the prior art references, other publications, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including the basis of modifying or combining certain cited references. To the extent any limitation is deemed not to be exactly met by an item of prior art, then any purported differences are such that the claimed subject matter as a whole would have been obvious to one skilled in the art at the time of the alleged invention, in view of the state of the art and knowledge of those skilled in the art. To the extent that an element of an Asserted Claim is not anticipated, the claim is rendered obvious by combination with one or more other prior art references identified in Appendix F.

B. Obviousness

1. U.S. Patent No. 8,352,730

Microsoft identifies in Appendix A the prior art references that render obvious the Asserted Claims of the '730 Patent and include below exemplary combinations showing the obviousness of the '730 Patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix A, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of ordinary skill in the art at the time of the '730 Patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix A, such reference may be combined with any other references listed in Appendix A for such element, thereby rendering the claims invalid for obviousness. To the extent a finder of fact determines that a limitation of any of the '730 Patent Asserted Claims is not disclosed by one of the references identified above, the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '730 Patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

a. Obviousness

For at least the reasons described below, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix A with any other reference or references listed in Appendix F along with the knowledge of one of ordinary skill in the art to

arrive at the inventions claims in the '730 Patent.⁶² For example, and without limitation, the Asserted Claims of the '730 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Fedronic	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Scott	• Fedronic • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans

⁶² Further, Defendants are actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-A. It would have been obvious to one of ordinary skill in the art to combine each of the prior art references listed in Appendix A with any of the systems identified in Table 2-A. Defendants reserve the right to supplement or amend these contentions as discovery progresses, to the extent permitted by the Court.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Berardi	• Fedronic • Scott • Ludtke • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ludtke	• Fedronic • Scott

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Berardi • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Baird	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Robinson	• Fedronic • Scott • Berardi • Ludtke • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Abdallah	• Fedronic • Scott • Berardi • Ludtke • Robinson • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Burger	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Akkermans	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Baird • AuthenTec • Chameleon

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
AuthenTec	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Chameleon	• Fedronic • Scott • Berardi • Ludtke • Robinson

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Abdallah • Akkermans • Baird • Burger • AuthenTec • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
DigitalPersona	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Microsoft Fingerprint Reader	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Optical Desktop	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Wireless IntelliMouse	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ringdale	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Sony Puppy FIU	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
UPEK	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Bolle	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Hofi	• Fedronic • Scott • Berardi

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ortiz	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Pocket Vault

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• RWKLB575 • The knowledge of a person of ordinary skill in the art.
Pocket Vault	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • RWKLB575 • The knowledge of a person of ordinary skill in the art.
RWKLB575	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • The knowledge of a person of ordinary skill in the art.

b. General Motivations to Combine

Obviousness: For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix A along with the knowledge of one of ordinary skill in the art to meet the limitations of the ‘730 Patent Asserted Claims. As a result, the references identified herein render one or more Asserted Claims of the ‘730 Patent obvious when the references are read in combination with each other, and/or when read in view of the state of the art and knowledge of those skilled in the art. Each and every reference identified is also relevant to the state of the art at the time of the alleged invention. Any of the references disclosed above may be combined with one another to render obvious (and therefore invalid) each of Proxense’s Asserted Claims. Defendant may rely upon a subset of the identified references or all of the references identified herein, including all references in Appendix A, for purposes of obviousness depending on the Court’s claim construction, positions taken by Proxense during this litigation, and further investigation and discovery.

Reservation of Rights: Moreover, as mentioned above, Defendant has not yet completed their search or discovery concerning additional prior art. As such, Defendant’s inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations

as appropriate, and Defendant reserves the right to identify additional specific combinations as well as to detail and explain such combinations.

No More Than Ordinary Variations of Prior Art; No Unexpected Results: To the extent not anticipated, the ‘730 Patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendant further believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit’s “rigid” application of the teaching, suggestion, or motivation to combine test, instead espousing an “expansive and flexible” approach); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017). Indeed, the Supreme Court held that a person of ordinary skill in the art is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendant identifies motivation and reason to combine the cited art.

Predictable Results; Obvious to Try: One or more combinations of the prior art references identified in Appendix A would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were

only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix A would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Interrelated Teachings: Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the '730 Patent Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Summary of Motivations to Combine: Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix A is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Same Area of Technology: Additionally, it would be obvious to one of ordinary skill in the art to consult and/or combine any of the prior art listed in Appendix A because all of these references relate to the same area of technology and/or are from analogous art. The ‘730 Patent Asserted Claims are directed to the use of biometric verification/authentication to determine a user’s access rights to a device, application etc. ‘730 Patent at Abstract. The ‘730 Patent Asserted Claims merely unite old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the ‘730 Patent Asserted Claims.

Same Technical Issues: A person of ordinary skill would have been motivated to combine the above prior art based on his/her knowledge, the nature of the problem to be solved, and the teachings of the prior art. The identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the prior art refer to or discuss other prior art, illustrating the close technical relationship among the prior art. For the ‘730 Patent, one of ordinary skill in the art would have been motivated to combine known prior art solutions described in these references relating to user authentication and/or biometric technology. For example, it was well-known around that time that users sought methods to automate the identification and verification of user and prevent unauthorized users from accessing a particular device or application.⁶³ Biometric authentication proved to be an important method for fraud detection and fraud deterrence.⁶⁴

⁶³ Wayman, at 2 (2005).

⁶⁴ Bubeck, at 1.

Demand and Market Forces: For example, market forces suggested a demand for improved security and ease of user authentication, and thus one of skill in the art would have thought to combine or modify references that described known methods that one of skill in the art would have recognized as offering improvements to solutions of that time.

Known Elements; Obvious to Try: Moreover, many of the claim elements were already known as admitted by the applicants in the patent specification. These elements represented design choices available to a person of ordinary skill. When there is a design need or market pressure to solve a problem such as identified previously and/or described in the '730 Patent, and there are a finite number of identified, predictable solutions, a person of ordinary skill would be motivated to combine the known options that are within his or her technical grasp. For the '730 Patent, there are a finite number of approaches for preventing access by unauthorized users without users needing to remember or keep track of their credentials. For example, as of the priority date of the '730 Patent, a POSITA would have been very familiar with basic elements of the '730 Patent's claims such as storing the biometric data of a user in a tamper proof format in storage, receiving a scan data from a biometric scan, comparing scan data to the stored biometric data, authenticating a user using an a third party trusted authority, and receiving an access message allowing the user to access an application. See Appx. A. Particularly, biometric authentication was known to employ methods of comparing a live sample of a person with a template of previously record information to verify the correct user was provided access to a system.⁶⁵ Such systems were implemented for high-security access control, personal locks and financial transactions.⁶⁶ Such elements were within the knowledge of a POSITA, whether or not disclosed in any particular reference, and the inclusion of such elements in the '730 Patent's claims does not render them novel or non-obvious.

⁶⁵ Harris, at 12.

⁶⁶ Wayman, at 2.

c. Exemplary Motivations to Combine

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix A with any other reference or references listed in Appendix A along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '730 Patent.

For example, and without limitation, the Asserted Claims of the '730 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

- (1) “persistently storing biometric data. . .in a tamper proof format written to a storage element...” / “a biometric key stores biometric data of a user. . . in a tamper proof format written to a storage element”

Claims 1 and 15 of the '730 patent recite limitations for storing a user's biometric data in a tamper proof format to a storage element. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Fedronic*, *Baird*, *Abdallah*, *Akkermans*, *Robinson*, *DigitalPersona*, *Sony FIU Puppy*, and *UPEK*, among other references, teach these limitations. See, e.g., A-1, A-5, A-6, A-8, A-9, A-12, A-17, A-18. A person of ordinary skill in the art would have found it obvious to combine or substitute *Fedronic*, *Baird*, *Abdallah*, *Akkermans*, *Robinson*, *DigitalPersona*, *Sony FIU Puppy*, and *UPEK* disclosure of storing a user's biometric data with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because storing user's identifying information, including biometric data, for user authentication was well known at the time the application leading to the '730 Patent was filed, and storing a user's

biometric data in addition to other identifying information would not have required undue experimentation.

- (2) “receiving scan data from a biometric scan” / “requests a biometric scan from the user to generate scan data”

Claims 1 and 15 of the '730 patent recite limitations for receiving a user's scan data from a biometric scan. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott, Berardi, Baird, Burger, and Ludtke*, among other references, teach these limitations. See, e.g., A-2, A-3, A-4, A-7, A-9. A person of ordinary skill in the art would have found it obvious to combine or substitute *Scott, Berardi, Baird, Burger, and Ludtke* disclosure of receiving a user's scan data from a biometric scan with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a user's scan data from a biometric scan for user authentication was well known at the time the application leading to the '730 Patent was filed.

- (3) “comparing scan data to the biometric data to determine whether the scan data matches the biometric data” / “a verification unit. . . receives scan data from a biometric scan for comparison against the biometric data, and if the scan data matches the biometric data. . .”

Claims 1 and 15 of the '730 Patent recite limitations for comparing and matching a user's scan data with a user's biometric data. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott, Berardi, Baird, Burger, and Robinson* among other references, teach these limitations. See, e.g., A-2, A-3, A-5, A-7, A-9. A person of ordinary skill in the art would

have found it obvious to combine or substitute *Scott, Berardi, Baird, Burger, and Robinson* disclosure of comparing and matching a user's scan data with a user's biometric data with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because comparing and matching a user's scan data and biometric data for user authentication was well known at the time the application leading to the '730 Patent was filed.

- (4) “sending on or more codes. . . for authentication by an agent that is a third party trusted authority” / “send the plurality of codes and the other data values to agent for authentication. . . wherein the agent is a third-party trusted authority”

Claims 1 and 15 of the '730 Patent recite limitations for sending codes for authentication of a user by a third party trusted authority. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Fedronic, Abdallah, Akkermans, and Ludtke* among other references, teach these limitations. See, e.g., A-1, A-4, A-6, A-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Fedronic, Abdallah, Akkermans, and Ludtke* disclosure of sending codes to a third party to authenticate a user with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because the use of a third party, such as a different entity, server, or other authentication module, to authenticate a user's credentials was well known at the time the application leading to the '730 Patent was filed.

- (5) “receiving an access message from the agent allowing the user access to an application. . .” / “the authentication unit receiving an access message from the agent allowing the user to access an application...”

Claims 1 and 15 of the '730 Patent recite limitations for receiving an access message from an agent allowing the user to access an application. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott Berardi, Burger* among other references, teach these limitations. See, e.g., A-2, A-3, A-7. A person of ordinary skill in the art would have found it obvious to combine or substitute *Scott, Berardi, Burger*, disclosure of receiving an access message from an agent to allow a user to access an application with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a message allowing a user access to an application as a part of the user authentication process was well known at the time the application leading to the '730 Patent was filed.

- (6) Biometric System References combined with Biometric Processing and Authentication References

A POSITA would have had reason to combine *Scott, Abdallah, Burger, AuthenTec FingerLoc, DigitalPersona*, and *Microsoft Fingerprint Reader* all of which relate to systems and methods for scanning and/or identifying a user's biometric data. Each of *Scott, Abdallah, AuthenTec FingerLoc, DigitalPersona*, and *Microsoft Fingerprint Reader* concern hardware and software used to sense and detect the biometric data of user for verification purposes. These references can be used for improved security, improved authentication efficiency, and/or improved personal identification information. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '730 Patent. Each

of *Fedronic*, *Davida*, and *Baird* provide means—not necessarily expressly present in all other references—for processing, comparing, encrypting/decrypting, and matching a user’s biometric data. A POSITA would have understood that biometric systems and methods (such as those taught in *Scott*, *Abdallah*, *AuthenTec FingerLoc*, *DigitalPersona*, and *Microsoft Fingerprint Reader*) were intended to be used in combination with certain biometric processing techniques to authenticate a user. A POSITA would understand that these biometric systems and methods provide an improvement that can be used to increase the security and efficiency of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user’s identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a biometric authentication, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to biometric comparisons and apply matching algorithms. Given that *Fedronic*, *Davida*, and *Baird*, describe biometric processing techniques (including comparing, encrypting/decrypting, and matching a user’s biometric data) used for user verification prior to allowing access to a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for biometric systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success.

(7) Personal Identification System References Combined with Client-Server Architecture References

A POSITA would have had reason to combine *Scott* and *Davida* all of which relate to systems and methods for user verification based on a user’s personal identification information.

Each of *Scott*, *Davida* concern hardware and software used that require a user's personal identification information to ensure only authorized users are accessing the device and/or applications. These references can be used for improved security, improved authentication efficiency, and/or improved accuracy in the authorization process. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '730 Patent. Each of *Fedronic*, *Berardi*, *Abdallah*, *Milgramm*, *Burger*, and *Baird*, provide means—not necessarily expressly present in all other references—for managing, storing, and processing personal user identification data in a secure manner using a client-server device architecture. A POSITA would have understood that personal identification systems and methods (such as those taught in *Scott and Davida*) were intended to be used in combination with client-server device architectures to securely authenticate a user and their personal identification information. A POSITA would understand that these personal identification systems and methods provide an improvement that can be used to increase the security and efficiency of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a client-server device architecture, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to querying a database, networking, encryption/decryption of user data, and wireless communication of access rights. Given that *Fedronic*, *Berardi*, *Abdallah*, *Milgramm*, *Burger*, and *Baird* describe the important uses of client-server device architectures (including querying a database, networking, encryption/decryption of user data, and wireless communication of access rights) for secure user verification prior to allowing access to a device and/or application, a POSITA would have been motivated to combine

the teachings of these references. The combination would apply known techniques for personal identifications systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success

2. U.S. Patent No. 8,886,954

Microsoft identifies in Appendix B the prior art references that render obvious the Asserted Claims of the '954 Patent and include below exemplary combinations showing the obviousness of the '954 Patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix B, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of ordinary skill in the art at the time of the '954 Patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix B, such reference may be combined with any other references listed in Appendix A for such element, thereby rendering the claims invalid for obviousness. To the extent a finder of fact determines that a limitation of any of the '954 Patent Asserted Claims is not disclosed by one of the references identified above, the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '954 Patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

a. Obviousness

For at least the reasons described below, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix B with any other reference or references listed in Appendix B along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '954 Patent.⁶⁷ For example, and without limitation, the Asserted Claims of the '954 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Fedronic	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.

⁶⁷ Further, Defendants are actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-B. It would have been obvious to one of ordinary skill in the art to combine each of the prior art references listed in Appendix B with any of the systems identified in Table 2-B. Defendants reserve the right to supplement or amend these contentions as discovery progresses, to the extent permitted by the Court.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Scott	• Fedronic • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Berardi	• Fedronic • Scott • Ludtke • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ludtke	• Fedronic • Scott • Berardi • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Baird	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Robinson	• Fedronic • Scott • Berardi • Ludtke • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Abdallah	• Fedronic • Scott • Berardi • Ludtke • Robinson • Burger • Akkermans • Baird

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Burger	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Akkermans	• Fedronic • Scott • Berardi

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Ludtke • Robinson • Abdallah • Burger • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
AuthenTec	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• RWKLB575 • The knowledge of a person of ordinary skill in the art.
Chameleon	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
DigitalPersona	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Fingerprint Reader	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Optical Desktop	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Wireless IntelliMouse	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ringdale	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Sony Puppy FIU	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
UPEK	• Fedronic

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Bolle	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Hofi

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Hofi	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ortiz	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Pocket Vault	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • RWKLB575 • The knowledge of a person of ordinary skill in the art.
RWKLB575	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • The knowledge of a person of ordinary skill in the art.

b. General Motivations to Combine

Obviousness: For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix B along with the knowledge of one of ordinary skill in the art to meet the limitations of the ‘954 Patent Asserted Claims. As a result, the references identified herein render one or more Asserted Claims of the ‘954 Patent obvious when the references are read in combination with each other, and/or when read in view of the state of the art and knowledge of those skilled in the art. Each and every reference identified is also relevant to the state of the art at the time of the alleged invention. Any of the references disclosed above may be combined with one another to render obvious (and therefore invalid) each of Proxense’s Asserted Claims. Defendant may rely upon a subset of the identified references or all of the references identified herein, including all references in Appendix B, for purposes of obviousness depending on the Court’s claim construction, positions taken by Proxense during this litigation, and further investigation and discovery.

Reservation of Rights: Moreover, as mentioned above, Defendant has not yet completed their search or discovery concerning additional prior art. As such, Defendant's inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendant reserves the right to identify additional specific combinations as well as to detail and explain such combinations.

No More Than Ordinary Variations of Prior Art; No Unexpected Results: To the extent not anticipated, the '954 Patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendant further believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendant identifies motivation and reason to combine the cited art.

Predictable Results; Obvious to Try: One or more combinations of the prior art references identified in Appendix B would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same

way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix B would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Interrelated Teachings: Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the '954 Patent Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Summary of Motivations to Combine: Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix B is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8)

the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Same Area of Technology: Additionally, it would be obvious to one of ordinary skill in the art to consult and/or combine any of the prior art listed in Appendix B because all of these references relate to the same area of technology and/or are from analogous art. The '954 Patent Asserted Claims are directed to the use of biometric verification/authentication to determine a user's access rights to a device, application etc. '954 Patent at Abstract. The '954 Patent Asserted Claims merely unite old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the '954 Patent Asserted Claims.

Same Technical Issues: A person of ordinary skill would have been motivated to combine the above prior art based on his/her knowledge, the nature of the problem to be solved, and the teachings of the prior art. The identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the prior art refer to or discuss other prior art, illustrating the close technical relationship among the prior art. For the '954 Patent, one of ordinary skill in the art would have been motivated to combine known prior art solutions described in these references relating to user authentication and/or biometric technology. For example, it was well-known around that time that users sought methods to automate the identification and verification of user and prevent unauthorized users from accessing

a particular device or application.⁶⁸ Biometric authentication proved to be an important method for fraud detection and fraud deterrence.⁶⁹

Demand and Market Forces: For example, market forces suggested a demand for improved security and ease of user authentication, and thus one of skill in the art would have thought to combine or modify references that described known methods that one of skill in the art would have recognized as offering improvements to solutions of that time.

Known Elements; Obvious to Try: Moreover, many of the claim elements were already known as admitted by the applicants in the patent specification. These elements represented design choices available to a person of ordinary skill. When there is a design need or market pressure to solve a problem such as identified previously and/or described in the ‘954 Patent, and there are a finite number of identified, predictable solutions, a person of ordinary skill would be motivated to combine the known options that are within his or her technical grasp. For the ‘954 Patent, there are a finite number of approaches for preventing the access by unauthorized users without users needing to remember or keep track of their credentials. For example, as of the priority date of the ‘954 Patent, a POSITA would have been very familiar with basic elements of the ‘954 Patent’s claims such as storing the biometric data of a user in a tamper proof format in storage, receiving a scan data from a biometric scan, comparing scan data to the stored biometric data, authenticating a user using an a third party trusted authority, and receiving an access message allowing the user to access an application. *See Appx. B.* As a further example, the use of digital signal processing and fingerprint recognition to properly identify a particular person dates back to the 1960s and was well-known at the time of the alleged invention.⁷⁰ Particularly, biometric authentication was

⁶⁸ Wayman, at 2.

⁶⁹ Bubeck, at 1.

⁷⁰ Wayman, at 2.

known to employ methods of comparing a live sample of a person with a template of previously record information to verify the correct user was provided access to a system.⁷¹ Such systems were implemented for high-security access control, personal locks and financial transactions.⁷² Such elements were within the knowledge of a POSITA, whether or not disclosed in any particular reference, and the inclusion of such elements in the '954 Patent's claims does not render them novel or non-obvious.

c. Exemplary Combinations

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix B with any other reference or references listed in Appendix B along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '954 Patent.

For example, and without limitation, the Asserted Claims of the '954 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

- (1) “persistently storing biometric data. . .in a tamper proof format written to a storage element...” / “a biometric key stores biometric data of a user. . . in a tamper proof format written to a storage element”

Claims 1 and 5 of the '954 Patent recite limitations for storing a user's biometric data in a tamper proof format to a storage element. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Fedronic*, *Baird*, *Abdallah*, *Akkermans*, *Robinson*, *DigitalPersona*, *Sony FIU Puppy*, and *UPEK* among other references, teach these limitations. See, e.g., B-1, B-5, B-6, B-8, B-9, B-12, B-17, B-18. A person of ordinary skill in the art would have found it obvious to

⁷¹ Harris, at 12.

⁷² Wayman, at 2.

combine or substitute *Fedronic, Baird, Abdallah, Akkermans, Robinson, DigitalPersona, Sony FIU Puppy*, and *UPEK* disclosure of storing a user's biometric data with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because storing user's identifying information, including biometric data, for user authentication was well known at the time the application leading to the '954 Patent was filed, and storing a user's biometric data in addition to other identifying information would not have required undue experimentation.

- (2) "receiving scan data from a biometric scan" / "requests a biometric scan from the user to generate scan data"

Claims 1 and 1 of the '954 Patent recite limitations for receiving a user's scan data from a biometric scan. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott, Berardi, Baird, Burger, and Ludtke*, among other references, teach these limitations. See, e.g., B-2, B-3, B-4, B-7, B-9. A person of ordinary skill in the art would have found it obvious to combine or substitute *Scott, Berardi, Baird, Burger, and Ludtke*, disclosure of receiving a user's scan data from a biometric scan with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a user's scan data from a biometric scan for user authentication was well known at the time the application leading to the '954 Patent was filed.

- (3) “comparing scan data to the biometric data to determine whether the scan data matches the biometric data” / “a verification unit. . . receives scan data from a biometric scan for comparison against the biometric data, and if the scan data matches the biometric data. . .”

Claims 1 and 5 of the '954 Patent recite limitations for comparing and matching a user's scan data with a user's biometric data. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott, Berardi, Baird, Burger, and Robinson* among other references, teach these limitations. See, e.g., B-2, B-3, B-5, B-7, B-9. A person of ordinary skill in the art would have found it obvious to combine or substitute *Scott, Berardi, Baird, Burger, and Robinson* disclosure of comparing and matching a user's scan data with a user's biometric data with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because comparing and matching a user's scan data and biometric data for user authentication was well known at the time the application leading to the '954 Patent was filed.

- (4) “sending on or more codes. . . for authentication by an agent that is a third party trusted authority” / “send the plurality of codes and the other data values to agent for authentication. . . wherein the agent is a third-party trusted authority”

Claims 1 and 5 of the '954 Patent recite limitations for sending codes for authentication of a user by a third party trusted authority. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Fedronic, Abdallah, Akkermans, and Ludtke* among other references, teach these limitations. See, e.g., B-1, B-4, B-6, B-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Fedronic, Abdallah, Akkermans, and Ludtke* disclosure

of sending codes to a third party to authenticate a user with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because the use of a third party, such as a different entity, server, or other authentication module, to authenticate a user's credentials was well known at the time the application leading to the '954 Patent was filed.

- (5) “receiving an access message from the agent allowing the user access to an application. . .” / “the authentication unit receiving an access message from the agent allowing the user to access an application...”

Claims 1 and 5 of the '954 Patent recite limitations for receiving an access message from an agent allowing the user to access an application. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott* and *Berardi*, among other references, teach these limitations. See, e.g., B-2, B-3. A person of ordinary skill in the art would have found it obvious to combine or substitute *Scott* and *Berardi* disclosure of receiving an access message from an agent to allow a user to access an application with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a message allowing a user access to an application as a part of the user authentication process was well known at the time the application leading to the '954 Patent was filed.

(6) Biometric System References combined with Biometric Processing and Authentication References

A POSITA would have had reason to combine *Scott*, *Abdallah*, *AuthenTec FingerLoc*, *DigitalPersona*, and *Microsoft Fingerprint Reader* all of which relate to systems and methods for scanning and/or identifying a user's biometric data. Each of *Scott*, *Abdallah*, *AuthenTec FingerLoc*, *DigitalPersona*, and *Microsoft Fingerprint Reader* concern hardware and software used to sense and detect the biometric data of user for verification purposes. These references can be used for improved security, improved authentication efficiency, and/or improved personal identification information. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '954 Patent. Each of *Fedronic*, *Davida*, and *Baird* provide means—not necessarily expressly present in all other references—for processing, comparing, encrypting/decrypting, and matching a user's biometric data. A POSITA would have understood that biometric systems and methods (such as those taught in *Scott*, *Abdallah*, *AuthenTec FingerLoc*, *DigitalPersona*, and *Microsoft Fingerprint Reader*) were intended to be used in combination with certain biometric processing techniques to authenticate a user. A POSITA would understand that these biometric systems and methods provide an improvement that can be used to increase the security and efficiency of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a biometric authentication, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to biometric comparisons and apply matching algorithms. Given that *Fedronic*, *Davida*, and *Baird*, describe biometric processing techniques (including comparing, encrypting/decrypting, and matching a user's biometric data) used for user verification

prior to allowing access to a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for biometric systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success.

(7) Personal Identification System References Combined with Client-Server Architecture References

A POSITA would have had reason to combine *Scott* and *Davida* all of which relate to systems and methods for user verification based on a user’s personal identification information. Each of *Scott*, *Davida* concern hardware and software used that require a user’s personal identification information to ensure only authorized users are accessing the device and/or applications. These references can be used for improved security, improved authentication efficiency, and/or improved accuracy in the authorization process. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the ’954 Patent. Each of *Fedronic*, *Berardi*, *Abdallah*, *Milgramm*, and *Baird*, provide means—not necessarily expressly present in all other references—for managing, storing, and processing personal user identification data in a secure manner using a client-server device architecture. A POSITA would have understood that personal identification systems and methods (such as those taught in *Scott and Davida*) were intended to be used in combination with client-server device architectures to securely authenticate a user and their personal identification information. A POSITA would understand that these personal identification systems and methods provide an improvement that can be used to increase the security and efficiency of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and

applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a client-server device architecture, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to querying a database, networking, encryption/decryption of user data, and wireless communication of access rights. Given that *Fedronic*, *Berardi*, *Abdallah*, *Milgramm*, and *Baird* describe the important uses of client-server device architectures (including querying a database, networking, encryption/decryption of user data, and wireless communication of access rights) for secure user verification prior to allowing access to a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for personal identifications systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be "obvious to try," because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success

3. U.S. Patent No. 9,298,905

Microsoft identifies in Appendix C the prior art references that render obvious the Asserted Claims of the '905 Patent and include below exemplary combinations showing the obviousness of the '905 Patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix C, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of ordinary skill in the art at the time of the '905 Patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix C, such reference may be combined with any other references listed in Appendix C for such element, thereby rendering the claims invalid for obviousness. To the extent a finder of fact determines that a limitation of any of the '905 Patent Asserted Claims is not

disclosed by one of the references identified above, the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '905 Patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

a. Obviousness

For at least the reasons described below, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix C with any other reference or references listed in Appendix C along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '905 Patent.⁷³ For example, and without limitation, the Asserted Claims of the '905 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Fedronic	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona

⁷³ Further, Defendants are actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-C. It would have been obvious to one of ordinary skill in the art to combine each of the prior art references listed in Appendix C with any of the systems identified in Table 2-C. Defendants reserve the right to supplement or amend these contentions as discovery progresses, to the extent permitted by the Court.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Scott	• Fedronic • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Berardi	• Fedronic • Scott • Ludtke • Robinson • Abdallah • Burger

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ludtke	• Fedronic • Scott • Berardi • Robinson • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Baird	• Fedronic

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Akkermans • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Robinson	• Fedronic • Scott • Berardi • Ludtke • Abdallah • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Abdallah	• Fedronic • Scott • Berardi • Ludtke • Robinson • Burger • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Burger	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Akkermans	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Burger • Baird • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
AuthenTec	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Chameleon	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
DigitalPersona	• Fedronic • Scott • Berardi • Ludtke

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Fingerprint Reader	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Microsoft Optical Desktop	• The knowledge of a person of ordinary skill in the art. • Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Wireless IntelliMouse	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ringdale	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Sony Puppy FIU	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
UPEK	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • Bolle • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Bolle	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Hofi • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Hofi	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Ortiz • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ortiz	• Fedronic • Scott

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Pocket Vault	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Ortiz • RWKLB575 • The knowledge of a person of ordinary skill in the art.
RWKLB575	• Fedronic • Scott • Berardi • Ludtke • Robinson • Abdallah • Akkermans • Baird • Burger • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Bolle • Hofi • Ortiz • Pocket Vault • The knowledge of a person of ordinary skill in the art.

b. General Motivations to Combine

Obviousness: For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix C along with the knowledge of one of ordinary skill in the art to meet the limitations of the ‘905 Patent Asserted Claims. As a result, the references identified herein render one or more Asserted Claims of the ‘905 Patent obvious when the references are read in combination with each other, and/or when

read in view of the state of the art and knowledge of those skilled in the art. Each and every reference identified is also relevant to the state of the art at the time of the alleged invention. Any of the references disclosed above may be combined with one another to render obvious (and therefore invalid) each of Proxense's Asserted Claims. Defendant may rely upon a subset of the identified references or all of the references identified herein, including all references in Appendix C, for purposes of obviousness depending on the Court's claim construction, positions taken by Proxense during this litigation, and further investigation and discovery.

Reservation of Rights: Moreover, as mentioned above, Defendant has not yet completed their search or discovery concerning additional prior art. As such, Defendant's inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendant reserves the right to identify additional specific combinations as well as to detail and explain such combinations.

No More Than Ordinary Variations of Prior Art; No Unexpected Results: To the extent not anticipated, the '905 Patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendant further believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary

creativity, not an automaton” and “in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendant identifies motivation and reason to combine the cited art.

Predictable Results; Obvious to Try: One or more combinations of the prior art references identified in Appendix C would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix C would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Interrelated Teachings: Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the ‘905 Patent Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Summary of Motivations to Combine: Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix C is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Same Area of Technology: Additionally, it would be obvious to one of ordinary skill in the art to consult and/or combine any of the prior art listed in Appendix C because all of these references relate to the same area of technology and/or are from analogous art. The '905 Patent Asserted Claims are directed to the use of biometric verification/authentication to determine a user's access rights to a device, application etc. '905 Patent at Abstract. The '905 Patent Asserted Claims merely unite old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the '905 Patent Asserted Claims.

Same Technical Issues: A person of ordinary skill would have been motivated to combine the above prior art based on his/her knowledge, the nature of the problem to be solved, and the teachings of the prior art. The identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the prior art refer to or discuss other prior art, illustrating the close technical relationship among the prior art. For the '905 Patent, one of ordinary skill in the art would have been motivated to combine known prior art solutions described in these references relating to user authentication and/or biometric technology. For example, it was well-known around that time that users sought methods to automate the identification and verification of user and prevent unauthorized users from accessing a particular device or application.⁷⁴ Biometric authentication proved to be an important method for fraud detection and fraud deterrence.⁷⁵

Demand and Market Forces: For example, market forces suggested a demand for improved security and ease of user authentication, and thus one of skill in the art would have thought to combine or modify references that described known methods that one of skill in the art would have recognized as offering improvements to solutions of that time.

Known Elements; Obvious to Try: Moreover, many of the claim elements were already known as admitted by the applicants in the patent specification. These elements represented design choices available to a person of ordinary skill. When there is a design need or market pressure to solve a problem such as identified previously and/or described in the '905 Patent, and there are a finite number of identified, predictable solutions, a person of ordinary skill would be motivated to combine the known options that are within his or her technical grasp. For the '905 Patent, there are a finite number of approaches for preventing the access by unauthorized users without users

⁷⁴ Wayman, at 2.

⁷⁵ Bubeck, at 1.

needing to remember or keep track of their credentials. For example, as of the priority date of the '905 Patent, a POSITA would have been very familiar with basic elements of the '905 Patent's claims such as storing the biometric data of a user in a tamper proof format in storage, receiving a scan data from a biometric scan, comparing scan data to the stored biometric data, authenticating a user using an a third party trusted authority, and receiving an access message allowing the user to access an application. *See* Appx. C. Particularly, biometric authentication was known to employ methods of comparing a live sample of a person with a template of previously record information to verify the correct user was provided access to a system.⁷⁶ Such systems were implemented for high-security access control, personal locks and financial transactions.⁷⁷ Such elements were within the knowledge of a POSITA, whether or not disclosed in any particular reference, and the inclusion of such elements in the '905 Patent's claims does not render them novel or non-obvious.

c. Exemplary Combinations

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix C with any other reference or references listed in Appendix C along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '905 Patent.

For example, and without limitation, the Asserted Claims of the '905 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

⁷⁶ Harris, at 12.

⁷⁷ Wayman, at 2.

- (1) “persistently storing biometric data. . .in a tamper proof format written to a storage element...” / “a biometric key stores biometric data of a user. . . in a tamper proof format written to a storage element”

Claims 1 and 15 of the '954 Patent recite limitations for storing a user's biometric data in a tamper proof format to a storage element. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Fedronic*, *Baird*, *Abdallah*, *Akkermans*, *Robinson*, *DigitalPersona*, *Sony FIU Puppy*, and *UPEK* among other references, teach these limitations. See, e.g., C-1, C-5, C-6, C-8, C-9, C-12, C-17, C-18. A person of ordinary skill in the art would have found it obvious to combine or substitute *Fedronic*, *Baird*, *Abdallah*, *Akkermans*, and *Robinson* disclosure of storing a user's biometric data with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because storing user's identifying information, including biometric data, for user authentication was well known at the time the application leading to the '954 Patent was filed, and storing a user's biometric data in addition to other identifying information would not have required undue experimentation.

- (2) “receiving scan data from a biometric scan” / “requests a biometric scan from the user to generate scan data”

Claims 1 and 15 of the '954 Patent recite limitations for receiving a user's scan data from a biometric scan. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott*, *Berardi*, *Baird*, *Burger*, and *Ludtke*, among other references, teach these limitations. See, e.g., C-2, C-3, C-4, C-7, C-9. A person of ordinary skill in the art would have found it obvious to combine or substitute *Scott*, *Berardi*, *Baird*, *Burger*, and *Ludtke*, disclosure of receiving a user's

scan data from a biometric scan with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a user's scan data from a biometric scan for user authentication was well known at the time the application leading to the '954 Patent was filed.

- (3) “comparing scan data to the biometric data to determine whether the scan data matches the biometric data” / “a verification unit. . . receives scan data from a biometric scan for comparison against the biometric data, and if the scan data matches the biometric data. . .”

Claims 1 and 15 of the '954 Patent recite limitations for comparing and matching a user's scan data with a user's biometric data. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott, Berardi, Baird, Burger*, and *Robinson* among other references, teach these limitations. See, e.g., C-2, C-3, C-7, C-9. A person of ordinary skill in the art would have found it obvious to combine or substitute *Scott, Berardi, Baird, Burger*, and *Robinson* disclosure of comparing and matching a user's scan data with a user's biometric data with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because comparing and matching a user's scan data and biometric data for user authentication was well known at the time the application leading to the '954 Patent was filed.

- (4) “sending on or more codes. . . for authentication by an agent that is a third party trusted authority” / “send the plurality of codes and the other data values to agent for authentication. . . wherein the agent is a third-party trusted authority”

Claims 1 and 15 of the '954 Patent recite limitations for sending codes for authentication of a user by a third party trusted authority. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Fedronic*, *Abdallah*, *Akkermans*, and *Ludtke* among other references, teach these limitations. *See, e.g.*, C-1, C-4, C-6, C-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Fedronic*, *Abdallah*, *Akkermans*, and *Ludtke* disclosure of sending codes to a third party to authenticate a user with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because the use of a third party, such as a different entity, server, or other authentication module, to authenticate a user's credentials was well known at the time the application leading to the '954 Patent was filed.

- (5) “receiving an access message from the agent allowing the user access to an application. . .” / “the authentication unit receiving an access message from the agent allowing the user to access an application...”

Claims 1 and 15 of the '954 Patent recite limitations for receiving an access message from an agent allowing the user to access an application. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Scott* and *Berardi*, among other references, teach these limitations. *See, e.g.*, C-2, C-3. A person of ordinary skill in the art would have found it obvious

to combine or substitute *Scott* and *Berardi* disclosure of receiving an access message from an agent to allow a user to access an application with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a message allowing a user access to an application as a part of the user authentication process was well known at the time the application leading to the '954 Patent was filed.

(6) Biometric System References combined with Biometric Processing and Authentication References

A POSITA would have had reason to combine *Scott*, *Abdallah*, *AuthenTec FingerLoc*, *DigitalPersona*, and *Microsoft Fingerprint Reader* all of which relate to systems and methods for scanning and/or identifying a user's biometric data. Each of *Scott*, *Abdallah*, *AuthenTec FingerLoc*, *DigitalPersona*, and *Microsoft Fingerprint Reader* concern hardware and software used to sense and detect the biometric data of user for verification purposes. These references can be used for improved security, improved authentication efficiency, and/or improved personal identification information. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '954 Patent. Each of *Fedronic*, *Davida*, and *Baird* provide means—not necessarily expressly present in all other references—for processing, comparing, encrypting/decrypting, and matching a user's biometric data. A POSITA would have understood that biometric systems and methods (such as those taught in *Scott*, *Abdallah*, *AuthenTec FingerLoc*, *DigitalPersona*, and *Microsoft Fingerprint Reader*) were intended to be used in combination with certain biometric processing techniques to authenticate a user. A POSITA would understand that these biometric systems and methods provide an improvement that can be used to increase the security and efficiency of user authentication, and

that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a biometric authentication, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to biometric comparisons and apply matching algorithms. Given that *Fedronic*, *Davida*, and *Baird*, describe biometric processing techniques (including comparing, encrypting/decrypting, and matching a user's biometric data) used for user verification prior to allowing access to a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for biometric systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be "obvious to try," because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success.

(7) Personal Identification System References Combined with Client-Server Architecture References

A POSITA would have had reason to combine *Scott* and *Davida* all of which relate to systems and methods for user verification based on a user's personal identification information. Each of *Scott*, *Davida* concern hardware and software used that require a user's personal identification information to ensure only authorized users are accessing the device and/or applications. These references can be used for improved security, improved authentication efficiency, and/or improved accuracy in the authorization process. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '954 Patent. Each of *Fedronic*, *Berardi*, *Abdallah*, *Milgramm*, and *Baird*, provide means—not necessarily expressly present in all other references—for managing, storing, and processing

personal user identification data in a secure manner using a client-server device architecture. A POSITA would have understood that personal identification systems and methods (such as those taught in *Scott and Davida*) were intended to be used in combination with client-server device architectures to securely authenticate a user and their personal identification information. A POSITA would understand that these personal identification systems and methods provide an improvement that can be used to increase the security and efficiency of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a client-server device architecture, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to querying a database, networking, encryption/decryption of user data, and wireless communication of access rights. Given that *Fedronic*, *Berardi*, *Abdallah*, *Milgramm*, and *Baird* describe the important uses of client-server device architectures (including querying a database, networking, encryption/decryption of user data, and wireless communication of access rights) for secure user verification prior to allowing access to a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for personal identifications systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be "obvious to try," because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success

4. U.S. Patent No. 8,646,042

Microsoft identifies in Appendix D the prior art references that render obvious the Asserted Claims of the '042 Patent and include below exemplary combinations showing the obviousness of the '042 Patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an

element is not disclosed in any one of the anticipatory references described in Appendix D, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of ordinary skill in the art at the time of the '042 Patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix D, such reference may be combined with any other references listed in Appendix D for such element, thereby rendering the claims invalid for obviousness. To the extent a finder of fact determines that a limitation of any of the '042 Patent Asserted Claims is not disclosed by one of the references identified above, the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '042 Patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

a. Obviousness

For at least the reasons described below, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix D with any other reference or references listed in Appendix D along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '042 Patent.⁷⁸ For example, and without limitation, the Asserted Claims of the '042 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

⁷⁸ Further, Defendants are actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-D. It would have been obvious to one of ordinary skill in the art to combine each of the prior art references listed in Appendix D with any of the systems identified in Table 2-D. Defendants reserve the right to supplement or amend these contentions as discovery progresses, to the extent permitted by the Court.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Berardi '619	• Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Beenau	• Berardi '619 • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Zimmerman	• Berardi '619

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Beenau • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Giobbi '157	• Berardi '619 • Beenau • Zimmerman • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Giobbi '139	• Berardi '619 • Beenau

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Zimmerman • Giobbi '157 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Broadcom	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Finn	• Berardi '619 • Beenau • Zimmerman

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Giobbi '157 • Giobbi '139 • Broadcom • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Loh	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Rietveld • Broadcom • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Rietveld	• Berardi '619 • Beenau • Zimmerman • Giobbi '157

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Giobbi '139 • Finn • Loh • Broadcom • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
AuthenTec	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Chameleon	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Broadcom • Finn • Loh • Rietveld • AuthenTec • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
DigitalPersona	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Fingerprint Reader	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Optical Desktop	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Wireless IntelliMouse	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ringdale	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Sony Puppy FIU	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
UPEK	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Pocket Vault	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • RWKLB575 • The knowledge of a person of ordinary skill in the art.
RWKLB575	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • The knowledge of a person of ordinary skill in the art.

b. General Motivations to Combine

Obviousness: For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix D along with the knowledge of one of ordinary skill in the art to meet the limitations of the '042 Patent Asserted

Claims. As a result, the references identified herein render one or more Asserted Claims of the '042 Patent obvious when the references are read in combination with each other, and/or when read in view of the state of the art and knowledge of those skilled in the art. Each and every reference identified is also relevant to the state of the art at the time of the alleged invention. Any of the references disclosed above may be combined with one another to render obvious (and therefore invalid) each of Proxense's Asserted Claims. Defendant may rely upon a subset of the identified references or all of the references identified herein, including all references in Appendix D, for purposes of obviousness depending on the Court's claim construction, positions taken by Proxense during this litigation, and further investigation and discovery.

Reservation of Rights: Moreover, as mentioned above, Defendant has not yet completed their search or discovery concerning additional prior art. As such, Defendant's inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendant reserves the right to identify additional specific combinations as well as to detail and explain such combinations.

No More Than Ordinary Variations of Prior Art; No Unexpected Results: To the extent not anticipated, the '042 Patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendant further believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016);

Intercontinental Great Brands LLC v. Kellogg N. Am. Co., 869 F.3d 1336, 1344 (Fed. Cir. 2017). Indeed, the Supreme Court held that a person of ordinary skill in the art is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendant identifies motivation and reason to combine the cited art.

Predictable Results; Obvious to Try: One or more combinations of the prior art references identified in Appendix D would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix D would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Interrelated Teachings: Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the ‘042 Patent Asserted Claims; the existence of a known need or

problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Summary of Motivations to Combine: Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix D is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Same Area of Technology: Additionally, it would be obvious to one of ordinary skill in the art to consult and/or combine any of the prior art listed in Appendix D because all of these references relate to the same area of technology and/or are from analogous art. The '042 Patent Asserted Claims are directed to user authentication using a hybrid device. '042 Patent at Abstract. The '042 Patent Asserted Claims merely unite old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the '042 Patent Asserted Claims.

Same Technical Issues: A person of ordinary skill would have been motivated to combine the above prior art based on his/her knowledge, the nature of the problem to be solved, and the teachings of the prior art. The identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the prior art refer to or discuss other prior art, illustrating the close technical relationship among the prior art. For the '042 Patent, one of ordinary skill in the art would have been motivated to combine known prior art solutions described in these references relating to user authentication and/or hybrid device features for verification. For example, there was a need for multi-factor authentication to help increase business productivity and allow for secure access to online accounts from various personal devices.⁷⁹ As a further example, the use of smartcards saw exponential growth since the 1990s because of the adaptability of smartcards and its security for various user transactions.⁸⁰

Demand and Market Forces: For example, market forces suggested a demand for increased security and versatility of user authentication systems, and thus one of skill in the art would have thought to combine or modify references that described known methods that one of skill in the art would have recognized as offering improvements to solutions of that time.

Known Elements; Obvious to Try: Moreover, many of the claim elements were already known as admitted by the applicants in the patent specification. These elements represented design choices available to a person of ordinary skill. When there is a design need or market pressure to solve a problem such as identified previously and/or described in the '042 Patent, and there are a finite number of identified, predictable solutions, a person of ordinary skill would be motivated to combine the known options that are within his or her technical grasp. For the '042 Patent, there

⁷⁹ Rose de Fremery, *The Evolution of Multi-Factor Authentication*, Lastpass (Dec. 22, 2021) <https://blog.lastpass.com/2021/12/the-evolution-of-multi-factor-authentication/>

⁸⁰ Rick Chrabaszewski, *Smart Cards: History* <https://condor.depaul.edu/elliott/shared/projects-archive/DS420Fall99/smartcard/project/SChistory.html>

are a finite number of approaches for expanding the capabilities of proximity systems and location tracking systems to run or interact with different applications. For example, as of the priority date of the '042 Patent, a POSITA would have been very familiar with basic elements of the '042 Patent's claims such as creating a wireless first link between an integrated circuit and external personal digital key, receiving a first signal, generating an enablement signal, and sending the enablement signal. *See* Appx. D. As a further example, the wireless transmission of signals and use of RFID systems for access control were well-known at the time of the alleged invention.⁸¹ Such elements were within the knowledge of a POSITA, whether or not disclosed in any particular reference, and the inclusion of such elements in the '042 Patent's claims does not render them novel or non-obvious.

c. Exemplary Combinations

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix D with any other reference or references listed in Appendix D along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '042 Patent.

For example, and without limitation, the Asserted Claims of the '042 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

- (1) “creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external personal digital key (PDK)”

Claims 10 of the '042 patent recite limitations for creating a wireless link between an integrated circuit of a hybrid device and an external personal digital key. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A

⁸¹ Bob Violino, *The History of RFID Technology*, RFID Journal (Jan 16, 2005) <https://www.rfidjournal.com/the-history-of-rfid-technology>.

to render these claims invalid. By way of example only, *Berardi '619*, *Beenau*, *Finn*, *Giobbi '157* and *Loh*, among other references, teach these limitations. See, e.g., D-1, D-2, D-4, D-7, D-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Berardi '619*, *Beenau*, *Finn*, *Giobbi '157* and *Loh* disclosure of creating a wireless link between two components with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because wireless connections and/or communication protocols between two different components was well known at the time the application leading to the '042 Patent was filed.

(2) “receiving a first signal at the integrated RDC”

Claims 10 of the '042 patent recite limitations for receiving a first signal at a device circuit. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Berardi*, *Broadcom*, and *Beenau*, among other references, teach these limitations. See, e.g., D-1, D-2, D-6. A person of ordinary skill in the art would have found it obvious to combine or substitute *Berardi*, *Broadcom*, and *Beenau* disclosure of receiving a first signal from a device circuit and/or other authentication component with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a first signal from a device component to authenticate certain user information was well known at the time the application leading to the '042 Patent was filed.

- (3) “generating an enablement signal enabling one or more of an application, a function and a service. . .”

Claims 10 of the '042 patent recite limitations for generating an enablement signal enabling access to an application, function, and/or service. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Zimmerman, Finn, Loh*, and *Giobbi '139* among other references, teach these limitations. See, e.g., D-3, D-5, D-7, D-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Zimmerman, Finn, Loh*, and *Giobbi '139* disclosure of generating an enablement or authentication signal with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because creating a signal and/or a security token that grants a user access to a particular application, function, or service was well known at the time the application leading to the '042 Patent was filed and creating a security token or the like to verify a user would not have required undue experimentation.

- (4) “sending the enablement signal to one or more of the hybrid device”

Claims 10 of the '042 patent recite limitations for sending an enablement signal. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Finn, Loh, Zimmerman, Berardi '619*, and *Beenau* among other references, teach these limitations. See, e.g., D-1, D-3, D-7, D-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Finn, Loh, Zimmerman, Berardi '619*, and *Beenau* disclosure of sending an enablement or authentication signal with the disclosures any of the other references because, for example, the

substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because sending a signal and/or a security token that grants a user access to a particular application, function, or service was well known at the time the application leading to the '042 Patent was filed and sending a security token or the like to verify a user would not have required undue experimentation.

(5) RFID System References combined with Access Control References

A POSITA would have had reason to combine *Berardi '619*, *Beenau*, *Loh* and *Finn* all of which relate to systems and methods for scanning and/or identifying a user's biometric data. Each of *Berardi '619*, *Beenau*, and *Finn* concern the use of an RFID reader and transponder to carry out certain user transactions. These references can be used for improved authentication efficiency and/or improved wireless user verification systems. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '042 Patent. Each of *Zimmerman*, *Broadcom*, *Giobbi '157*, and *Giobbi '139* provide means—not necessarily expressly present in all other references—for processing, authenticating, and granting a user access to particular device/application. A POSITA would have understood that RFID systems and methods (such as those taught in *Berardi '619*, *Beenau*, *Loh* and *Finn*) were intended to be used in combination with certain access control techniques to authenticate a user and increase the adaptability of certain access control systems. A POSITA would understand that these RFID systems and methods provide an improvement that can be used to increase the security and adaptability of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in

order to implement a RFID access control systems, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to authenticating a user information and granting a user access to a certain device or application. Given that *Zimmerman*, describe access control processing techniques (including comparing, verifying, and matching a user's identification data) used to determine whether a user is authorized to access a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for RFID systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be "obvious to try," because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success.

5. U.S. Patent No. 9,679,289

Microsoft identifies in Appendix E the prior art references that render obvious the Asserted Claims of the '289 Patent and include below exemplary combinations showing the obviousness of the '289 Patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix E, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of ordinary skill in the art at the time of the '289 Patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix E, such reference may be combined with any other references listed in Appendix E for such element, thereby rendering the claims invalid for obviousness. To the extent a finder of fact determines that a limitation of any of the '289 Patent Asserted Claims is not disclosed by one of the references identified above, the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '289 Patent Asserted Claims is not anticipated, it

does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

a. Obviousness

For at least the reasons described below, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix E with any other reference or references listed in Appendix E along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '289 Patent.⁸² For example, and without limitation, the Asserted Claims of the '289 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Berardi '619	• Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault

⁸² Further, Defendants are actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-E. It would have been obvious to one of ordinary skill in the art to combine each of the prior art references listed in Appendix E with any of the systems identified in Table 2-E. Defendants reserve the right to supplement or amend these contentions as discovery progresses, to the extent permitted by the Court.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• RWKLB575 • The knowledge of a person of ordinary skill in the art.
Beenau	• Berardi '619 • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Zimmerman	• Berardi '619 • Beenau • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Giobbi '157	• The knowledge of a person of ordinary skill in the art. • Berardi '619 • Beenau • Zimmerman • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Giobbi '139	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Broadcom	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Finn	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Loh	• Berardi '619

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Rietveld • Broadcom • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Rietveld	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Loh • Broadcom • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
AuthenTec	• Berardi '619 • Beenau

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Chameleon	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
DigitalPersona	• Berardi '619 • Beenau • Zimmerman

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Fingerprint Reader	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Optical Desktop	• Berardi '619 • Beenau • Zimmerman • Giobbi '157

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Wireless IntelliMouse	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ringdale	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Sony Puppy FIU	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
UPEK	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Pocket Vault	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • RWKLB575 • The knowledge of a person of ordinary skill in the art.
RWKLB575	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • The knowledge of a person of ordinary skill in the art.

b. General Motivations to Combine

Obviousness: For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix E along with the knowledge of one of ordinary skill in the art to meet the limitations of the ‘289 Patent Asserted Claims. As a result, the references identified herein render one or more Asserted Claims of the ‘289 Patent obvious when the references are read in combination with each other, and/or when read in view of the state of the art and knowledge of those skilled in the art. Each and every reference identified is also relevant to the state of the art at the time of the alleged invention. Any of the references disclosed above may be combined with one another to render obvious (and therefore invalid) each of Proxense’s Asserted Claims. Defendant may rely upon a subset of the identified references or all of the references identified herein, including all references in Appendix E, for purposes of obviousness depending on the Court’s claim construction, positions taken by Proxense during this litigation, and further investigation and discovery.

Reservation of Rights: Moreover, as mentioned above, Defendant has not yet completed their search or discovery concerning additional prior art. As such, Defendant's inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendant reserves the right to identify additional specific combinations as well as to detail and explain such combinations.

No More Than Ordinary Variations of Prior Art; No Unexpected Results: To the extent not anticipated, the '289 Patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendant further believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendant identifies motivation and reason to combine the cited art.

Predictable Results; Obvious to Try: One or more combinations of the prior art references identified in Appendix E would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same

way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix E would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Interrelated Teachings: Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the '289 Patent Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Summary of Motivations to Combine: Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix E is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8)

the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Same Area of Technology: Additionally, it would be obvious to one of ordinary skill in the art to consult and/or combine any of the prior art listed in Appendix E because all of these references relate to the same area of technology and/or are from analogous art. The ‘289 Patent Asserted Claims are directed to user authentication using a hybrid device. ‘289 Patent at Abstract. The ‘289 Patent Asserted Claims merely unite old elements, well known in the field, with no change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the ‘289 Patent Asserted Claims.

Same Technical Issues: A person of ordinary skill would have been motivated to combine the above prior art based on his/her knowledge, the nature of the problem to be solved, and the teachings of the prior art. The identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the prior art refer to or discuss other prior art, illustrating the close technical relationship among the prior art. For the ‘289 Patent, one of ordinary skill in the art would have been motivated to combine known prior art solutions described in these references relating to user authentication and/or hybrid device features for verification. For example, there was a need for multi-factor authentication to help increase business productivity and allow for secure access to online accounts from various personal

devices.⁸³ As a further example, the use of smartcards saw exponential growth since the 1990s because of the adaptability of smartcards and its security for various user transactions.⁸⁴

Demand and Market Forces: For example, market forces suggested a demand for increased security and versatility of user authentication systems, and thus one of skill in the art would have thought to combine or modify references that described known methods that one of skill in the art would have recognized as offering improvements to solutions of that time.

Known Elements; Obvious to Try: Moreover, many of the claim elements were already known as admitted by the applicants in the patent specification. These elements represented design choices available to a person of ordinary skill. When there is a design need or market pressure to solve a problem such as identified previously and/or described in the ‘289 Patent, and there are a finite number of identified, predictable solutions, a person of ordinary skill would be motivated to combine the known options that are within his or her technical grasp. For the ‘289 Patent, there are a finite number of approaches for expanding the capabilities of proximity systems and location tracking systems to run or interact with different applications. For example, as of the priority date of the ‘289 Patent, a POSITA would have been very familiar with basic elements of the ‘289 Patent’s claims such as creating a wireless first link between an integrated circuit and external personal digital key, receiving a first signal, generating an enablement signal, and sending the enablement signal. *See* Appx. E. As a further example, the wireless transmission of signals and use of RFID systems for access control were well-known at the time of the alleged invention.⁸⁵ Such elements were within the knowledge of a POSITA, whether or not disclosed in any particular

⁸³ Fremery, at 1.

⁸⁴ Chrabaszewski, at 1.

⁸⁵ Violino, at 1.

reference, and the inclusion of such elements in the '289 Patent's claims does not render them novel or non-obvious.

c. Exemplary Combinations

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix E with any other reference or references listed in Appendix E along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '289 Patent.

For example, and without limitation, the Asserted Claims of the '289 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

- (1) “creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external personal digital key (PDK)”

Claim 14 of the '289 Patent recite limitations for creating a wireless link between an integrated circuit of a hybrid device and an external personal digital key. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Berardi '619*, *Beenau*, *Finn*, *Giobbi '157* and *Loh*, among other references, teach these limitations. See, e.g., E-1, E-2, E-4, E-7, E-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Berardi '619*, *Beenau*, *Finn*, *Giobbi '157* and *Loh* disclosure of creating a wireless link between two components with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because wireless connections and/or communication protocols between two different components was well known at the time the application leading to the '289 Patent was filed.

(2) “receiving a first signal at the integrated RDC”

Claim 14 of the '289 Patent recite limitations for receiving a first signal at a device circuit. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Berardi*, *Broadcom*, and *Beenau*, among other references, teach these limitations. See, e.g., E-1, E-6. A person of ordinary skill in the art would have found it obvious to combine or substitute *Berardi*, *Broadcom*, and *Beenau* disclosure of receiving a first signal from a device circuit and/or other authentication component with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a first signal from a device component to authenticate certain user information was well known at the time the application leading to the '289 Patent was filed.

(3) “generating an enablement signal enabling one or more of an application, a function and a service. . .”

Claim 14 of the '289 Patent recite limitations for generating an enablement signal enabling access to an application, function, and/or service. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Zimmerman*, *Finn*, *Loh*, and *Giobbi '139* among other references, teach these limitations. See, e.g., E-3, E-5, E-7, E-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Zimmerman*, *Finn*, *Loh*, and *Giobbi '139* disclosure of generating an enablement or authentication signal with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have

had a reasonable expectation of success for the combination or substitution, for example, because creating a signal and/or a security token that grants a user access to a particular application, function, or service was well known at the time the application leading to the '289 Patent was filed and creating a security token or the like to verify a user would not have required undue experimentation.

(4) “sending the enablement signal to one or more of the hybrid device”

Claim 14 of the '289 Patent recite limitations for sending an enablement signal. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Finn*, *Loh*, *Zimmerman*, *Berardi '619*, and *Beenau* among other references, teach these limitations. See, e.g., E-1, E-2, E-3, E-7, E-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Finn*, *Loh*, *Zimmerman*, *Berardi '619*, and *Beenau* disclosure of sending an enablement or authentication signal with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because sending a signal and/or a security token that grants a user access to a particular application, function, or service was well known at the time the application leading to the '289 Patent was filed and sending a security token or the like to verify a user would not have required undue experimentation.

(5) RFID System References combined with Access Control References

A POSITA would have had reason to combine *Berardi '619*, *Beenau*, *Loh*, and *Finn* all of which relate to systems and methods for scanning and/or identifying a user's biometric data. Each of *Berardi '619*, *Beenau*, and *Finn* concern the use of an RFID reader and transponder to carry out

certain user transactions. These references can be used for improved authentication efficiency and/or improved wireless user verification systems. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '289 Patent. Each of *Zimmerman*, *Broadcom*, *Giobbi '157*, and *Giobbi '139* provide means—not necessarily expressly present in all other references—for processing, authenticating, and granting a user access to particular device/application. A POSITA would have understood that RFID systems and methods (such as those taught in *Berardi '619*, *Beenau*, and *Finn*) were intended to be used in combination with certain access control techniques to authenticate a user and increase the adaptability of certain access control systems. A POSITA would understand that these RFID systems and methods provide an improvement that can be used to increase the security and adaptability of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a RFID access control systems, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to authenticating a user information and granting a user access to a certain device or application. Given that *Zimmerman*, describe access control processing techniques (including comparing, verifying, and matching a user's identification data) used to determine whether a user is authorized to access a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for RFID systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be “obvious to try,” because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success.

6. U.S. Patent No. 10,073,960

Microsoft identifies in Appendix F the prior art references that render obvious the Asserted Claims of the '960 Patent and include below exemplary combinations showing the obviousness of the '960 Patent Asserted Claims in view of the prior art. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix F, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of ordinary skill in the art at the time of the '960 Patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Appendix F, such reference may be combined with any other references listed in Appendix F for such element, thereby rendering the claims invalid for obviousness. To the extent a finder of fact determines that a limitation of any of the '960 Patent Asserted Claims is not disclosed by one of the references identified above, the claim is nevertheless unpatentable as obvious because they contain nothing that constitutes a patentable innovation. To the extent a finder of fact determines that a limitation of the '960 Patent Asserted Claims is not anticipated, it does not go beyond combining familiar elements according to known methods to achieve predictable results or does more than choose between clear alternatives known to those of ordinary skill in the art.

a. Obviousness

For at least the reasons described below, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix F with any other reference or references listed in Appendix F along with the knowledge of one of ordinary skill in the art to

arrive at the inventions claims in the '960 Patent.⁸⁶ For example, and without limitation, the Asserted Claims of the '960 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Berardi '619	• Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Beenau	• Berardi '619 • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona

⁸⁶ Further, Defendants are actively searching for information regarding at least the systems, devices, and/or inventions listed above in Table 2-F. It would have been obvious to one of ordinary skill in the art to combine each of the prior art references listed in Appendix F with any of the systems identified in Table 2-F. Defendants reserve the right to supplement or amend these contentions as discovery progresses, to the extent permitted by the Court.

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Zimmerman	• Berardi '619 • Beenau • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Giobbi '157	• Berardi '619 • Beenau • Zimmerman • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Giobbi '139	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Broadcom	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Finn	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Loh	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Rietveld • Broadcom • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Rietveld	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Finn • Loh • Broadcom • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
AuthenTec	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Chameleon	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Rietveld • Loh • AuthenTec • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
DigitalPersona	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Fingerprint Reader	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Optical Desktop	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Microsoft Wireless IntelliMouse	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
Ringdale	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Sony Puppy FIU • UPEK • Pocket Vault

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
	• RWKLB575 • The knowledge of a person of ordinary skill in the art.
Sony Puppy FIU	• Berardi '619 • Beenau • Zimmerman • Rietveld • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • UPEK • Pocket Vault • RWKLB575 • The knowledge of a person of ordinary skill in the art.
UPEK	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • Pocket Vault • RWKLB575

Patent No. or Title (Primary Inventor/Author)	In Combination with One or More of: (Patent No. or Title (Primary Inventor/Author))
Pocket Vault	• The knowledge of a person of ordinary skill in the art. • Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • RWKLB575 • The knowledge of a person of ordinary skill in the art.
RWKLB575	• Berardi '619 • Beenau • Zimmerman • Giobbi '157 • Giobbi '139 • Broadcom • Finn • Loh • Rietveld • AuthenTec • Chameleon • DigitalPersona • Microsoft Fingerprint Reader • Microsoft Optical Desktop • Microsoft Wireless IntelliMouse • Ringdale • Sony Puppy FIU • UPEK • Pocket Vault • The knowledge of a person of ordinary skill in the art.

b. General Motivations to Combine

Obviousness: For at least the reasons described in these contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those prior art references identified in Appendix F along with the knowledge of one of ordinary skill in the art to meet the limitations of the ‘960 Patent Asserted Claims. As a result, the references identified herein render one or more Asserted Claims of the ‘960 Patent obvious when the references are read in combination with each other, and/or when read in view of the state of the art and knowledge of those skilled in the art. Each and every reference identified is also relevant to the state of the art at the time of the alleged invention. Any of the references disclosed above may be combined with one another to render obvious (and therefore invalid) each of Proxense’s Asserted Claims. Defendant may rely upon a subset of the identified references or all of the references identified herein, including all references in Appendix F, for purposes of obviousness depending on the Court’s claim construction, positions taken by Proxense during this litigation, and further investigation and discovery.

Reservation of Rights: Moreover, as mentioned above, Defendant has not yet completed their search or discovery concerning additional prior art. As such, Defendant’s inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Defendant reserves the right to identify additional specific combinations as well as to detail and explain such combinations.

No More Than Ordinary Variations of Prior Art; No Unexpected Results: To the extent not anticipated, the ‘960 Patent Asserted Claims represent no more than the result of ordinary variations of the prior art. Defendant further believes that no showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the

attached charts, as each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 415-16 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach); *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1058 (Fed. Cir. 2016); *Intercontinental Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1344 (Fed. Cir. 2017). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 420-21. Nevertheless, in addition to the information contained elsewhere in these contentions, Defendant identifies motivation and reason to combine the cited art.

Predictable Results; Obvious to Try: One or more combinations of the prior art references identified in Appendix F would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to try combining the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. Further, the combinations of the prior art references identified in Appendix F would have been obvious because the combinations represent known potential options with a reasonable expectation of success.

Interrelated Teachings: Additional evidence that there would have been a motivation to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; common authorship; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution encompassed by the '960 Patent Asserted Claims; the existence of a known need or problem in the field of the endeavor at the time of the alleged invention(s); and the background knowledge that would have been possessed by a person having ordinary skill in the art.

Summary of Motivations to Combine: Thus, the motivation to combine the teachings of the prior art references disclosed in Appendix F is found in the references themselves and also in: (1) the nature of the problem being solved; (2) the express, implied and inherent teachings of the prior art; (3) the knowledge of persons of ordinary skill in the art; (4) the predictable results obtained in combining the different elements of the prior art; (5) the predictable results obtained in simple substitution of one known element for another; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

Same Area of Technology: Additionally, it would be obvious to one of ordinary skill in the art to consult and/or combine any of the prior art listed in Appendix F because all of these references relate to the same area of technology and/or are from analogous art. The '960 Patent Asserted Claims are directed to user authentication using a hybrid device. '960 Patent at Abstract. The '960 Patent Asserted Claims merely unite old elements, well known in the field, with no

change in their respective function or result. Given the interrelated teachings of the prior art, the effects of demands known to the design community or present in the marketplace, and the background knowledge possessed by a person having ordinary skill in the art, it would have been obvious for one of ordinary skill in the art to combine these familiar elements, disclosed and/or embodied in the prior art listed above to practice the '960 Patent Asserted Claims.

Same Technical Issues: A person of ordinary skill would have been motivated to combine the above prior art based on his/her knowledge, the nature of the problem to be solved, and the teachings of the prior art. The identified prior art addresses the same or similar technical issues and suggests the same or similar solutions to those issues. Moreover, some of the prior art refer to or discuss other prior art, illustrating the close technical relationship among the prior art. For the '960 Patent, one of ordinary skill in the art would have been motivated to combine known prior art solutions described in these references relating to user authentication and/or hybrid device features for verification. For example, there was a need for multi-factor authentication to help increase business productivity and allow for secure access to online accounts from various personal devices.⁸⁷ As a further example, the use of smartcards saw exponential growth since the 1990s because of the adaptability of smartcards and its security for various user transactions.⁸⁸

Demand and Market Forces: For example, market forces suggested a demand for increased security and versatility of user authentication systems, and thus one of skill in the art would have thought to combine or modify references that described known methods that one of skill in the art would have recognized as offering improvements to solutions of that time.

Known Elements; Obvious to Try: Moreover, many of the claim elements were already known as admitted by the applicants in the patent specification. These elements represented design

⁸⁷ Fremery, at 1.

⁸⁸ Chrabaszewski, at 1.

choices available to a person of ordinary skill. When there is a design need or market pressure to solve a problem such as identified previously and/or described in the '960 Patent, and there are a finite number of identified, predictable solutions, a person of ordinary skill would be motivated to combine the known options that are within his or her technical grasp. For the '960 Patent, there are a finite number of approaches for expanding the capabilities of proximity systems and location tracking systems to run or interact with different applications. For example, as of the priority date of the '960 Patent, a POSITA would have been very familiar with basic elements of the '960 Patent's claims such as creating a wireless first link between an integrated circuit and external personal digital key, receiving a first signal, generating an enablement signal, and sending the enablement signal. See Appx. F As a further example, the wireless transmission of signals and use of RFID systems for access control were well-known at the time of the alleged invention.⁸⁹ Such elements were within the knowledge of a POSITA, whether or not disclosed in any particular reference, and the inclusion of such elements in the '960 Patent's claims does not render them novel or non-obvious.

c. Exemplary Combinations

For at least the reasons described above, it would have been obvious to one of ordinary skill in the art to combine each prior art reference listed in Appendix F with any other reference or references listed in Appendix F along with the knowledge of one of ordinary skill in the art to arrive at the inventions claims in the '960 Patent.

For example, and without limitation, the Asserted Claims of the '960 Patent would have been obvious to one of ordinary skill in the art in view of the following combinations:

⁸⁹ Bob Violino, *The History of RFID Technology*, RFID Journal (Jan 16, 2005) <https://www.rfidjournal.com/the-history-of-rfid-technology>.

- (1) “creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external personal digital key (PDK)”

Claim 14 of the '960 Patent recite limitations for creating a wireless link between an integrated circuit of a hybrid device and an external personal digital key. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Berardi '619*, *Beenau*, *Finn*, *Giobbi '157* and *Loh*, among other references, teach these limitations. See, e.g., F-1, F-2, F-4, F-7, F-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Berardi '619*, *Beenau*, *Finn*, *Giobbi '157* and *Loh* disclosure of creating a wireless link between two components with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because wireless connections and/or communication protocols between two different components was well known at the time the application leading to the '960 Patent was filed.

- (2) “receiving a first signal at the integrated RDC”

Claim 14 of the '960 Patent recite limitations for receiving a first signal at a device circuit. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Berardi '619*, *Broadcom* and *Beenau*, among other references, teach these limitations. See, e.g., F-1, F-2, F-6. A person of ordinary skill in the art would have found it obvious to combine or substitute *Berardi '619*, *Broadcom*, and *Beenau* disclosure of receiving a first signal from a device circuit and/or other authentication component with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for

another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because receiving a first signal from a device component to authenticate certain user information was well known at the time the application leading to the '960 Patent was filed.

- (3) “generating an enablement signal enabling one or more of an application, a function and a service. . .”

Claim 14 of the '960 Patent recite limitations for generating an enablement signal enabling access to an application, function, and/or service. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Zimmerman, Finn, Loh, and Giobbi '139* among other references, teach these limitations. See, e.g., F-3, F-5, F-7, F-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Zimmerman, Finn, Loh, and Giobbi '139* disclosure of generating an enablement or authentication signal with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because creating a signal and/or a security token that grants a user access to a particular application, function, or service was well known at the time the application leading to the '960 Patent was filed and creating a security token or the like to verify a user would not have required undue experimentation.

- (4) “sending the enablement signal to one or more of the hybrid device”

Claim 14 of the '960 Patent recite limitations for sending an enablement signal. It would have been obvious to combine or modify each reference with another reference identified in Sections IV.A to render these claims invalid. By way of example only, *Finn, Loh, Zimmerman,*

Berardi '619, and *Beenau* among other references, teach these limitations. See, e.g., F-1, F-2, F-7, F-8. A person of ordinary skill in the art would have found it obvious to combine or substitute *Finn*, *Loh*, *Zimmerman*, *Berardi '619*, and *Beenau* disclosure of sending an enablement or authentication signal with the disclosures any of the other references because, for example, the substitute would be simple, requiring only a simple substitution of one known element for another. A person of ordinary skill in the art would have had a reasonable expectation of success for the combination or substitution, for example, because sending a signal and/or a security token that grants a user access to a particular application, function, or service was well known at the time the application leading to the '960 Patent was filed and sending a security token or the like to verify a user would not have required undue experimentation.

(5) RFID System References combined with Access Control References

A POSITA would have had reason to combine *Berardi '619*, *Beenau*, *Loh*, and *Finn* all of which relate to systems and methods for scanning and/or identifying a user's biometric data. Each of *Berardi '619*, *Beenau*, and *Finn* concern the use of an RFID reader and transponder to carry out certain user transactions. These references can be used for improved authentication efficiency and/or improved wireless user verification systems. Systems and methods such as those described in these references were conventional as of the time of the earliest alleged priority of the '960 Patent. Each of *Zimmerman*, *Broadcom*, *Giobbi '157*, and *Giobbi '139* provide means—not necessarily expressly present in all other references—for processing, authenticating, and granting a user access to particular device/application. A POSITA would have understood that RFID systems and methods (such as those taught in *Berardi '619*, *Beenau*, and *Finn*) were intended to be used in combination with certain access control techniques to authenticate a user and increase the adaptability of certain access control systems. A POSITA would understand that these RFID

systems and methods provide an improvement that can be used to increase the security and adaptability of user authentication, and that improvements to those aspects of the process could be used in numerous different devices and applications that must verify a user's identity prior to providing access to such devices and/or applications. A POSITA would further understand that in order to implement a RFID access control systems, systems and methods would commonly be combined with other traditional processing steps such as, but not limited to authenticating a user information and granting a user access to a certain device or application. Given that *Zimmerman*, describe access control processing techniques (including comparing, verifying, and matching a user's identification data) used to determine whether a user is authorized to access a device and/or application, a POSITA would have been motivated to combine the teachings of these references. The combination would apply known techniques for RFID systems and methods that were ready for improvement, in order to yield predictable results. The combination would further be "obvious to try," because it would involve simple design choices from a finite number of identified, predictable solutions, with a reasonable expectation of success.

VII. INVALIDITY UNDER 35 U.S.C. § 112

The grounds identified below both individually and collectively render certain of the Asserted Claims invalid under the statutory requirements of § 112. By identifying certain claim language below, Microsoft does not imply that such language is entitled to any patentable weight when comparing the claim as a whole to the prior art. Microsoft's identifications are made based on Microsoft's present understanding of the Asserted Claims and Proxense's apparent interpretation of these claims as reflected in its Infringement Contentions, and Microsoft reserves the right to amend these identifications, including in response to claim constructions and claim interpretations that would render claim limitations not enabled, lacking in written description, or indefinite. To the extent a claim element is contained within an element identified below or

encompass an element identified below, that claim element also renders the claim invalid under 35 U.S.C. § 112.

A. Lack of Enablement and Written Description under 35 U.S.C. § 112 ¶ 1

35 U.S.C. § 112 includes an enablement requirement: “The specification shall contain a written description . . . of the manner and process of making and using [the invention] in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.” 35 U.S.C. § 112, ¶ 1. To satisfy the enablement requirement, the disclosure “must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’” *Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1366 (Fed. Cir. 1997); *MagSil Corp. v. Hitachi Glob. Storage Techs., Inc.*, 687 F.3d 1377, 1381 (Fed. Cir. 2012); *Sitrick v. Dreamworks, LLC*, 516 F.3d 993, 999 (Fed. Cir. 2008). If a specification teaches away from a substantial portion of the claim or does not enable the full scope of the claim, there is no enablement. *AK Steel Corp. v. Sollac*, 344 F.3d 1234 (Fed. Cir. 2003); *see also MagSil Corp.*, 687 F.3d at 1383-84 (Fed. Cir. 2012).

35 U.S.C. § 112 further includes a written description requirement: “The specification shall contain a written description of the invention” 35 U.S.C. § 112, ¶ 1. “To satisfy the written description requirement, a patent applicant must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention.” *ICU Medical Inc. v. Alaris Medical Systems, Inc.*, 558 F.3d 1368, 1377 (Fed. Cir. 2009) (internal quotation marks and citations omitted); *see also Synthes USA, LLC v. Spinal Kinetics, Inc.*, 734 F.3d 1332, 1340 (Fed. Cir. 2013). “The test [for written description support] requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to

that skilled artisan and show that the inventor actually invented the invention claimed.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

The specification must describe the claimed invention in sufficient detail so that a POSITA can recognize what is claimed. “The appearance of mere indistinct words in a specification or a claim, even an original claim, does not necessarily satisfy that requirement.” *University of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 923 (Fed. Cir. 2004) (internal quotation marks and citations omitted).

Based on Microsoft’s present understanding of the Asserted Claims and Proxense’s apparent interpretation of these claims as reflected in its Infringement Contentions, the following limitations of the Asserted Claims may fail to satisfy the requirements of § 112, ¶ 1 because the specification and original patent application fail to provide an enabling disclosure of and written description support for at least the following limitations:

1. U.S. Patent No. 8,352,730

Term	Relevant Claim(s)
“device ID code”	1, 3, 15
“other data values”	1, 15
“access message”	1, 15
“persistently storing... in a tamper proof format... that is unable to be subsequently altered”	1, 15
“a plurality of codes and other data values comprising a device ID code”	1, 15
“an agent that is a third-party trusted authority”	1, 15
“receiving an access message from the agent”	1, 15
“wherein the one or more codes and other data values are transmitted to the agent over a network”	2
“wherein the biometric data and the scan data are both based on a fingerprint scan by the user”	5

2. U.S. Patent No. 8,886,954

Term	Relevant Claim(s)
“device ID code”	1, 3

Term	Relevant Claim(s)
“other data values”	1
“access message”	1
“persistently storing biometric data... in a tamper proof format... that is not capable of being subsequently altered”	1
“a plurality of codes and other data values comprising a device ID code”	1
“third party that operates as a trusted authority”	1
“receiving, at an application, an access message from the trusted authority”	1
“wherein the one or more codes and other data values are transmitted to the trusted authority over a network”	2

3. U.S. Patent No. 9,298,905

Term	Relevant Claim(s)
“access message”	1, 15
“access message from the third-party trusted authority”	1, 15
“persistently storing biometric data”	1, 15

4. U.S. Patent No. 8,646,042

Term	Relevant Claim(s)
“hybrid device”	10
“enablement signal”	10
“personal digital key”	10
“creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external personal digital key (PDK)”	10
“within a proximity zone”	1

5. U.S. Patent No. 9,679,289

Term	Relevant Claim(s)
“hybrid device”	14, 16
“enablement signal”	14, 16
“creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external device”	14
“within a proximity zone”	1
“within the proximity zone”	1

6. U.S. Patent No. 10,073,960

Term	Relevant Claim(s)
“enablement signal”	14, 16
“creating a first wireless link between an integrated, wireless communication interface of a device and an external device”	14
“within a proximity zone”	1

B. Indefiniteness Under 35 U.S.C. § 112 ¶ 2

Section 112, ¶ 2 includes a definiteness requirement: “[T]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112, ¶ 2. “[A] patent is invalid for indefiniteness if its claims, read in light of the patent’s specification and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014).

The definiteness requirement requires that the claim must set forth what the applicant regards as the invention, and do so with sufficient particularity and definiteness. *Allen Eng’g Corp. v. Bartell Indus.*, 299 F.3d 1336, 1348 (Fed. Cir. 2002). Where it would be apparent to one of skill in the art, based on the patent specification, that the “invention” set forth in a claim is not what the patent applicant regarded as the invention, the claim is invalid. *Id.*

Based on Microsoft’s present understanding of the Asserted Claims and Proxense’s apparent interpretation of these claims as reflected in its Infringement Contentions, the following limitations of the Asserted Claims may fail to satisfy the requirements of § 112, ¶ 2 because the precise scope of at least the terms listed below cannot be determined with reasonable certainty by a POSITA when reading the claims in light of the specification and prosecution history.

1. U.S. Patent No. 8,352,730

Term	Relevant Claim(s)
“persistently storing... in a tamper proof format... that is unable to be subsequently altered”	1, 15
“a plurality of codes and other data values comprising a device ID code”	1, 15
“an agent that is a third-party trusted authority”	1, 15
“receiving an access message from the agent”	1, 15
“wherein the one or more codes and other data values are transmitted to the agent over a network”	2
“wherein the biometric data and the scan data are both based on a fingerprint scan by the user”	5

2. U.S. Patent No. 8,886,954

Term	Relevant Claim(s)
“persistently storing biometric data... in a tamper proof format... that is not capable of being subsequently altered”	1
“a plurality of codes and other data values comprising a device ID code”	1
“third party that operates as a trusted authority”	1
“receiving, at an application, an access message from the trusted authority”	1
“wherein the one or more codes and other data values are transmitted to the trusted authority over a network”	2

3. U.S. Patent No. 9,298,905

Term	Relevant Claim(s)
“access message from the third-party trusted authority”	1, 15
“persistently storing biometric data”	1, 15

4. U.S. Patent No. 8,646,042

Term	Relevant Claim(s)
“creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external personal digital key (PDK)”	10
“within a proximity zone”	1

5. U.S. Patent No. 9,679,289

Term	Relevant Claim(s)
“creating a first wireless link between an integrated receiver-decoder circuit (RDC) of a hybrid device and an external device”	14
“within a proximity zone”	1
“within the proximity zone”	1

6. U.S. Patent No. 10,073,960

Term	Relevant Claim(s)
“creating a first wireless link between an integrated, wireless communication interface of a device and an external device”	14
“within a proximity zone”	1

VIII. INVALIDITY UNDER 35 U.S.C. § 101

Microsoft further asserts that certain of the asserted patents are ineligible for patent protection under 35 U.S.C. § 101. To the extent that Microsoft identifies a defect that is also present in a claim of the asserted patents that is not at issue in this case (i.e., a claim that is not one of the Asserted Claims), Microsoft contends that such claim is also ineligible for patent protection. Based on Microsoft’s investigation to date and currently-available information, the following patents are ineligible for patent protection.

To be patentable subject matter under § 101, a claim must be directed to one of four eligible subject matter categories: “new and useful process, machine, manufacture, or composition of matter.” 35 U.S.C. § 101. “Claims that fall within one of the four subject matter categories may nevertheless be ineligible if they encompass laws of nature, physical phenomena, or abstract ideas.” *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014) (citing *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980)). The Supreme Court established a two-step test for deciding the subject matter eligibility of claims under § 101. *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014). First, the claims must be analyzed to

determine whether they are drawn to one of the statutory exceptions. *Id.* Claims that invoke generic computer components instead of reciting specific improvements in computer capabilities are abstract under this first step. *See Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335-36 (Fed. Cir. 2016). Second, the elements of the claims must be viewed both individually and as an ordered combination to see if there is an “inventive concept.” *Id.* The mere fact that a claim recites or implies that an abstract idea is implemented using a general-purpose computer does not supply an inventive concept necessary to satisfy § 101. *See Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016); *Alice*, 134 S. Ct. at 2357-59.

A. U.S. Patent Nos. 8,352,730, 8,886,954, and 9,298,905 (“Biometric Authentication Patents”)

All of the Asserted Claims of the ’730, ’954, and ’905 Patents are directed to ineligible subject matter under 35 U.S.C. § 101 and applicable case law authority.⁹⁰

The ’730, ’954, and ’905 Patents Asserted Claims are directed to abstract ideas and therefore not eligible subject matter under 35 U.S.C. § 101. *E.g.*, *Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 573 U.S. 208, 216 (2014). By way of example, the Asserted Claims of the ’730, ’954, and ’905 Patents are generally directed to the abstract ideas of receiving, comparing, and

⁹⁰ See, e.g., *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012); *Trading Techs. Int’l, Inc. v. IBG, LLC*, 921 F.3d 1084 (Fed. Cir. 2019); *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759 (Fed. Cir. 2019); *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161 (Fed. Cir. 2018); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335 (Fed. Cir. 2018); *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018); *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329 (Fed. Cir. 2017), cert. denied, 139 S. Ct. 378 (2018); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332 (Fed. Cir. 2017); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369 (Fed. Cir. 2016); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363 (Fed. Cir. 2015); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343 (Fed. Cir. 2015); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343 (Fed. Cir. 2014); *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011); *Automated Tracking Sols., LLC v. Coca-Cola Co.*, 723 F. App’x 989 (Fed. Cir. 2018); *EasyWeb Innovations, LLC v. Twitter, Inc.*, 689 F. App’x 969, 971 (Fed. Cir. 2017); *Yu v. Apple Inc.*, 1 F.4th 1040 (Fed. Cir. 2021).

transmitting information. Each of the asserted claims are directed to the abstract idea of receiving a biometric signal, comparing the biometric to an existing biometric signature, and transmitting a signal to access a device and/or application. The '730, '954, and '905 Patents discuss that the purported problem of authentication techniques was that users were required to their memorize access credentials. Yet, none of the asserted claims of any of the '730, '954, and '905 Patents nor any the specifications of the '730, '954, and '905 Patents disclose any technological improvement to any technological problem; instead the claimed features merely apply conventional, generic user interface and touch technologies. It is unclear what the claimed advance is over the prior art. Thus, under *Alice* Step 1, the '730, '954, and '905 Patents Asserted Claims are directed to one or more ineligible concepts.

Under *Alice* Step 2, the '730, '954, and '905 Patents do not add an inventive step to the general abstract idea. The asserted claims of the '730, '954, and '905 Patents recite generic biometric sensors, conventional receivers/transmitters, and ordinary database technologies at the highest level of abstraction, which does not add anything particularly inventive to the asserted claims. *See, e.g., Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021) (“Only conventional camera components are recited to effectuate the resulting “enhanced” image—two image sensors, two lenses, an analog-to-digital converting circuitry, an image memory, and a digital image processor. Indeed, it is undisputed that these components were well-known and conventional.”); *see also id.* at 1045 (“Because claim 1 is recited at a high level of generality and merely invokes well-understood, routine, conventional components to apply the abstract idea identified above ... claim 1 fails at step two, *see, e.g., Alice*, 573 U.S. at 225–26, 134 S.Ct. 2347; *Mayo*, 566 U.S. at 73, 132 S.Ct. 1289; *see also, e.g., In re TLI Commc’ns*, 823 F.3d at 615 (concluding patent claims ineligible at step two in part because ‘the recited physical components behave exactly as expected according

to their ordinary use’).”). Considered collectively, the limitations of the asserted claims of the ’730, ’954, and ’905 Patents amount to nothing more than receiving, comparing, and transmitting information using conventional components.

B. U.S. Patent Nos. 8,646,042, 9,679,289, and 10,073,960 (“Hybrid Device Patents”)

All of the Asserted Claims of the ’042, ’289, and ’960 Patents are directed to ineligible subject matter under 35 U.S.C. § 101 and applicable case law authority.⁹¹

The ’042, ’289, and ’960 Patents Asserted Claims are directed to abstract ideas and therefore not eligible subject matter under 35 U.S.C. § 101. *E.g.*, *Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 573 U.S. 208, 216 (2014). By way of example, the Asserted Claims of the ’042, ’289, and ’960 Patents are generally directed to the abstract idea of receiving and transmitting information. Each of the asserted claims are directed to the abstract idea of receiving a signal, generating a signal, and transmitting that signal to a device. The ’042, ’289, and ’960 Patents discuss that the purported problem of proximity sensor and location tracking was that the systems had “limited capabilities” to run or interact with different applications. Yet, none of the asserted claims of any of the ’042, ’289, and ’960 Patents nor any the specifications of the ’042, ’289, and

⁹¹ See, e.g., *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347 (2014); *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012); *Trading Techs. Int’l, Inc. v. IBG, LLC*, 921 F.3d 1084 (Fed. Cir. 2019); *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759 (Fed. Cir. 2019); *SAP America, Inc. v. InvestPic, LLC*, 898 F.3d 1161 (Fed. Cir. 2018); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335 (Fed. Cir. 2018); *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121 (Fed. Cir. 2018); *Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329 (Fed. Cir. 2017), cert. denied, 139 S. Ct. 378 (2018); *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332 (Fed. Cir. 2017); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016); *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369 (Fed. Cir. 2016); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363 (Fed. Cir. 2015); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343 (Fed. Cir. 2015); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir. 2015); *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343 (Fed. Cir. 2014); *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014); *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014); *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366 (Fed. Cir. 2011); *Automated Tracking Sols., LLC v. Coca-Cola Co.*, 723 F. App’x 989 (Fed. Cir. 2018); *EasyWeb Innovations, LLC v. Twitter, Inc.*, 689 F. App’x 969, 971 (Fed. Cir. 2017); *Yu v. Apple Inc.*, 1 F.4th 1040 (Fed. Cir. 2021).

'960 Patents disclose any technological improvement to any technological problem; instead the claimed features merely apply conventional, generic computer tasks. It is unclear what the claimed advance is over the prior art. Thus, under *Alice* Step 1, the '042, '289, and '960 Patents Asserted Claims are directed to one or more ineligible concepts.

Under *Alice* Step 2, the '042, '289, and '960 Patents do not add an inventive step to the general abstract idea. The asserted claims of the '730, '954, and '905 Patents recite generic wireless communications, conventional receivers/transmitters, and ordinary signal transmission technologies at the highest level of abstraction, which does not add anything particularly inventive to the asserted claims. *See, e.g., Yu v. Apple Inc.*, 1 F.4th 1040, 1043 (Fed. Cir. 2021) (“Only conventional camera components are recited to effectuate the resulting “enhanced” image—two image sensors, two lenses, an analog-to-digital converting circuitry, an image memory, and a digital image processor. Indeed, it is undisputed that these components were well-known and conventional.”); *see also id.* at 1045 (“Because claim 1 is recited at a high level of generality and merely invokes well-understood, routine, conventional components to apply the abstract idea identified above ... claim 1 fails at step two, *see, e.g., Alice*, 573 U.S. at 225–26, 134 S.Ct. 2347; *Mayo*, 566 U.S. at 73, 132 S.Ct. 1289; *see also, e.g., In re TLI Commc’ns*, 823 F.3d at 615 (concluding patent claims ineligible at step two in part because ‘the recited physical components behave exactly as expected according to their ordinary use’).”). Considered collectively, the limitations of the asserted claims of the '042, '289, and '960 Patents amount to nothing more than receiving and transmitting information using conventional components.

IX. DOCUMENT PRODUCTION ACCOMPANYING PRELIMINARY INVALIDITY CONTENTIONS

Microsoft is producing and/or making available for inspection documents required under the Court’s Scheduling Order under a separate letter. Microsoft reserves the right to produce and

rely on additional documents relating to its products in view of, for example, additional information revealed during discovery regarding Proxense's allegations and/or amendments to Proxense's Infringement Contentions as discovery processes, including the testimony of inventors, authors and publishers of the printed publications and prior art systems identified herein.

Date: January 4, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

I certify that a true and correct copy of the above and foregoing document was served on counsel for Plaintiff Proxense LLC., via electronic delivery on January 4, 2024.

/s/ Betty Chen

Betty Chen