

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETSKOPE, INC.,
Petitioner,

v.

BITGLASS, INC.,
Patent Owner.

IPR2021-01045
Patent 10,757,090 B2

Before JAMES J. MAYBERRY, KEVIN C. TROCK, and
SHEILA F. McSHANE, *Administrative Patent Judges*.

TROCK, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background*

Netskope, Inc. (“Petitioner”) filed a Petition (Paper 2 (“Pet.” or “Petition”)) to institute an *inter partes* review of claims 1–5, 8–13, and 16 (the “challenged claims”) of U.S. Patent No. 10,757,090 B2 (Ex. 1001, “the ’090 patent”). Bitglass, Inc. (“Patent Owner”) timely filed a Preliminary Response. Paper 6 (“Prelim. Resp.”).

An *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon consideration of the Petition, the Preliminary Response, and the evidence of record, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we institute an *inter partes* review.

B. *Real Party in Interest*

Petitioner identifies itself, Netskope, Inc., as the only real party-in-interest. Pet. 1. Patent Owner identifies itself, Bitglass, Inc., as the only real party in interest. Paper 4, 2.

C. *Related Matters*

According to the parties, the ’090 patent is the subject of the following action: *Netskope, Inc. v. Bitglass, Inc.*, No. 3:21-cv-00916 (N.D. Cal.). Pet. 2; Paper 4, 2.

The parties also acknowledge that Petitioner has filed another petition (IPR2021-01046) challenging claims 17–21 and 24 of the ’090 patent. Pet. 2; Paper 4, 2.

Further, the parties identify a continuation of the ’090 patent (U.S. Patent No. 10,855,671 B2 (“the ’671 patent”)), and further acknowledge that

Petitioner has filed two petitions (PGR2021-00091 and PGR2021-00092) challenging claims of the '671 patent. Pet. 2; Paper 4, 2.

D. The '090 Patent (Ex. 1001)

The '090 patent relates, in relevant part, to providing secure user access to applications which are hosted by a remote server, e.g., “cloud applications.” Ex. 1001, 2:28–29, 5:61–62, 6:23–24; *see id.* at 3:5–9. In particular, the '090 patent describes using network proxies to route user access requests and provide secure access. *See id.* at 5:60–6:22. Figure 3b of the '090 patent is reproduced below.

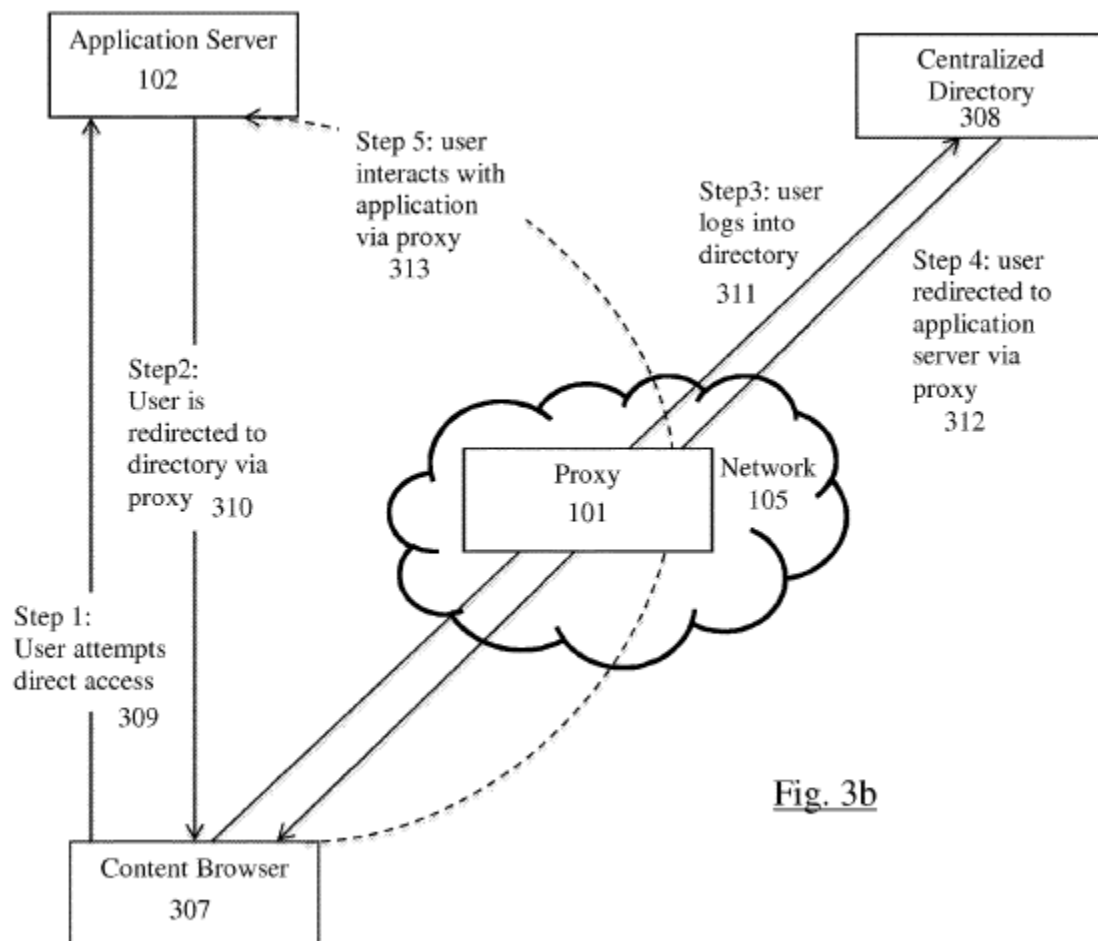


Figure 3b, above, shows a network having a proxy that enables a user's content browser access to an application hosted on an application server. *Id.* at 2:5–6, 6:23–24. In order to access an application hosted on an

application server, a user must first login. *Id.* at 6:4–5, 6:23–24. As shown in Figure 3b, in step 1, “a user attempts access 309 to the application [hosted on the application server] 102 via a content browser 307.” *Id.* at 6:23–24. In step 2, “application server 102 may redirect 310 the [access] request to point to the centralized directory 308 via the proxy 101.” *Id.* at 6:25–26. In step 3, centralized directory 308 receives the user’s login credentials and performs a login process. *Id.* at 6:12–17, 6:26–28. After a successful login, the user’s content browser 307 is directed to the application server 102 by the proxy 101 and the user’s content browser 307 then interacts with the application hosted on application server 102. *Id.* at 6:28–39. As described above, proxy 101 “broker[s] all authentication requests and manipulat[es] the requests and responses” to provide access to resources. *Id.* at 6:39–41.

In another embodiment in which a proxy helps manage user content requests and security, a Security Assertion Markup Language (SAML) proxy is used to provide a user secure access to an application provided by an application provider. *Id.* at 2:23–24, 6:44–51. Figure 11 of the ’090 patent is reproduced below.

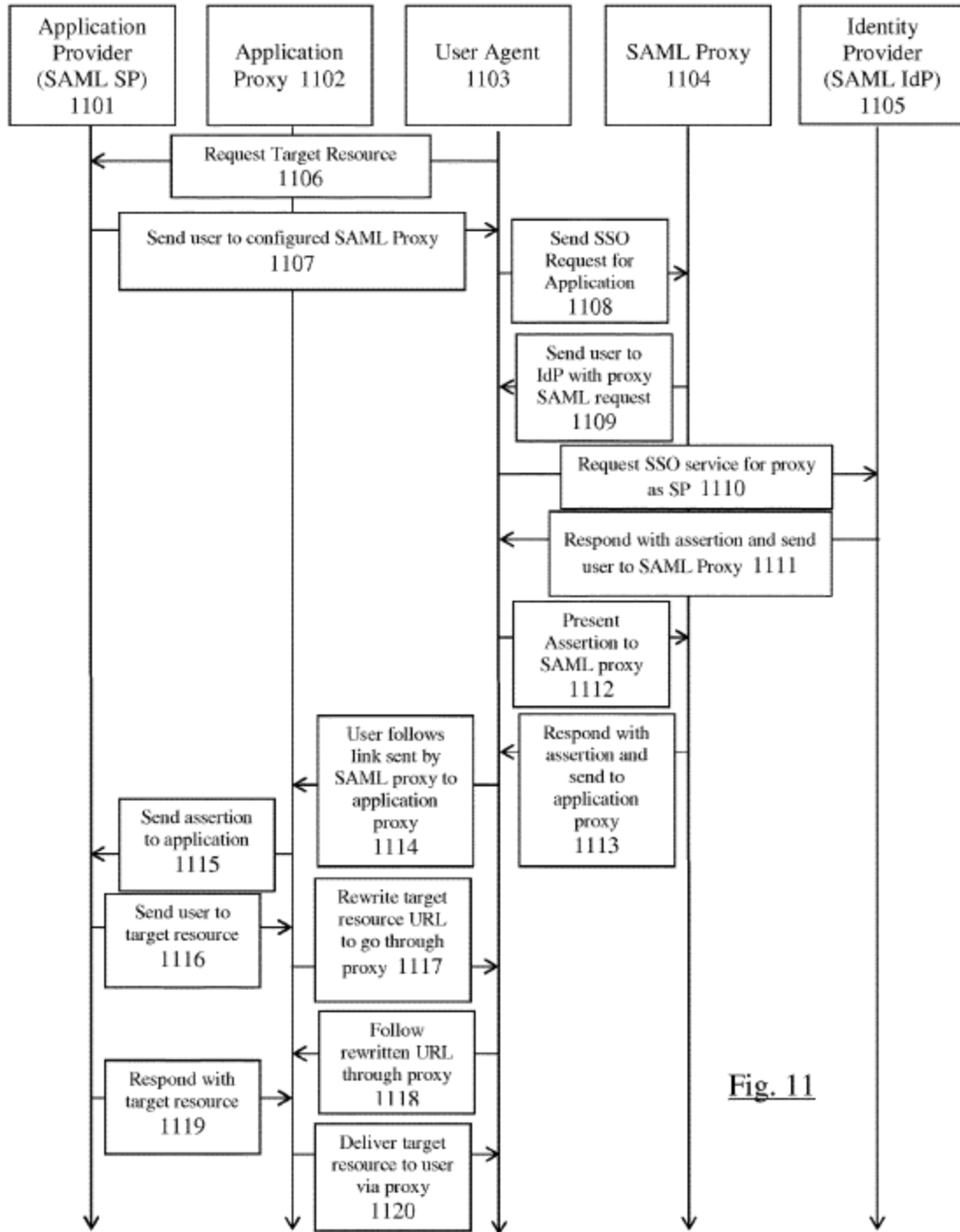


Fig. 11

Figure 11, above, depicts a flow diagram showing communication sequences and data exchanges between a SAML proxy and various “entities.” *Id.* at 2:23–24, 6:44–49. As shown in Figure 11, in order to provide users access to resources, a series of communication sequences and

data exchanges occur between SAML proxy 1104, application provider/application 1101, application proxy 1102, user agent 1103, and identity provider (IdP) 1105. *Id.* at 6:49–52. First, in block 1106, user agent 1103 sends a request to application provider 1101 for a target resource provided by application provider 1101. *Id.* at 7:4–5. In response, in block 1107, application provider 1101 directs user agent 1103 to SAML proxy 1104, and, in block 1108, “user agent 1103 sends a single sign on (SSO) request for the application” to SAML proxy 1104. *Id.* at 7:5–9. In block 1109, SAML proxy 1104 receives the SSO request and directs user agent 1103 to IdP 1105 so that, in block 1110, user agent 1103 sends an SSO request to IdP 1105. *Id.* at 7:9–13. Next, in block 1111, IdP 1105 validates and authenticates the SSO request and provides user agent 1103 “an assertion of a valid SSO . . . for the SAML proxy.” *Id.* at 6:58–59, 7:13–15. Following that, in block 1112, user agent 1103 sends the assertion to SAML proxy 1104 so that, in block 1113, SAML proxy 1104 creates an assertion for application proxy 1102 and sends that assertion and the location of application proxy 1102 (e.g., an IP address) to user agent 1103. *Id.* at 7:15–19. Having the assertion and location of application proxy 1102, user agent 1103 receives the target resource via application proxy 1102. *See id.* at 7:20–38.

In the embodiment of Figure 11, as shown in blocks 1114–1120, user agent 1103 accesses the resources of application provider 1101 using application proxy 1102 as an intermediary. *See id.* However, user agent 1103 may also access application provider 1101 directly. In the case that “application proxy 1102 goes down or its functionality deteriorates . . . SAML proxy 1104 routes the user directly to the application 1101,

bypassing the application proxy 1102” in order to provide “failover” protection. *Id.* at 6:64–7:1.

E. Challenged Claims

Petitioner challenges claims 1–5, 8–13, and 16 of the ’090 patent.

Pet. 1. Claim 1 is independent claim and is reproduced below.

- 1[pre] A method for improving secure access to application programs, comprising:
 - 1[a][i] receiving, by a proxy server, a single-sign-on request from a device for access to an application program,
 - 1[a][ii] the device directed by an application server to a cloud network location of the proxy server,
 - 1[a][iii] the proxy server configured to authenticate computer security validation requests for the application program;
 - 1[b][i] directing, by the proxy server, the device to an identity provider by sending the device a network location of the identity provider,
 - 1[b][ii] the identity provider configured to authenticate computer security validation requests for the proxy server,
 - 1[b][iii] the device communicates directly with the identity provider using the network location of the identity provider,
 - 1[b][iv] the identity provider redirects the device to the cloud network location of the proxy server with a single-sign-on validation after validation of the single-sign-on request;
 - 1[c] receiving, at the proxy server, the single-sign-on validation from the device;
 - 1[d] creating, by the proxy server, a valid identification assertion;

- 1[e][i] directing, by the proxy server, the device to the application server by sending the device a network location of the application server and the valid identification assertion,
- 1[e][ii] the device communicates directly with the application server using the network location of the application server and the valid identification assertion,
- 1[e][iii] the device thereafter communicates directly with the application server for subsequent accesses to the application program.

Ex. 1001, 13:56–14:19 (bracketed labeling designated by Petitioner; *see* Pet. 20–39).

F. Evidence

Petitioner relies upon the following evidence:

- (1) U.S. Patent Application Publication No. US 2015/0319156 A1, published November 5, 2015 (“Guccione”) (Ex. 1004);
- (2) Jill Gemmill *et al.*, *Cross-domain Authorization for Federated Virtual Organizations Using the myVocs Collaboration Environment*, Concurrency and Computation: Practice and Experience (2008) (“Gemmill”) (Ex. 1005);
- (3) U.S. Patent Application Publication No. US 2012/0278872 A1, published November 1, 2012 (“Woelfel”) (Ex. 1006);
- (4) WIPO Publication No. WO 2005/069823 A2, published August 4, 2005 (“Song”) (Ex. 1007); and
- (5) Declaration of Michael Franz, Ph.D. (Ex. 1002).

Patent Owner relies upon the Declaration of Seth James Nielson, Ph.D. (Ex. 2001).

G. Asserted Grounds of Unpatentability

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–5, 9–13	103	Guccione, Woelfel
8, 16	103	Guccione, Woelfel, Song
1–5, 9–13	103	Gemmill, Woelfel
8, 16	103	Gemmill, Woelfel, Song

Pet. 4.

II. ANALYSIS

A. Discretionary Denial under 35 U.S.C. § 314(a)

Patent Owner argues that institution should be denied “under 35 U.S.C. § 314(a) . . . given the Petitioner’s . . . filing of multiple petitions on the ’090 patent.” Prelim. Resp. 19.¹ (requesting the Board deny “this Petition . . . or the Petition filed in IPR2021-01046” on a discretionary basis).

We exercise our discretion to not institute trial in IPR2021-01046, because Petitioner did not justify two petitions challenging the ’090 patent.² In view of the denial of institution of IPR2021-01046, we need not consider further Patent Owner’s arguments on discretionary denial in this Decision.

B. Level of Ordinary Skill

In determining whether an invention would have been obvious, we consider the level of ordinary skill in the pertinent art at the time of the invention. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). “The importance of resolving the level of ordinary skill in the art lies in the

¹ Although Patent Owner cites to 35 U.S.C. § 325(d), Patent Owner does not make any substantive arguments under that section.

² We enter a Decision Denying Institution in IPR2021-01046 concurrent with entering the present Decision.

necessity of maintaining objectivity in the obviousness inquiry.” *Ryko Mfg. Co. v. Nu-Star, Inc.*, 950 F.2d 714, 718 (Fed. Cir. 1991).

Petitioner describes a person of ordinary skill in the art as a person having “a bachelor’s degree in computer science, computer engineering, or electrical engineering (or equivalent experience) and [having] at least two years of experience with applying web-based service computing technologies, including the then-current technologies such as HTML, XML, Java, and JavaScript.” Pet. 12 (citing Ex. 1002 ¶¶ 24–28).

Patent Owner states “the Board can resolve this IPR against Petitioner at the preliminary stage by applying the Petition’s asserted definition of the person of level of ordinary skill in the art.” Prelim. Resp. 30 (citing Pet. 12).

Petitioner’s description of the level of ordinary skill is generally consistent with the subject matter of the ’090 patent. For purposes of this Decision, we adopt Petitioner’s assessment of the level of ordinary skill.

C. Claim Construction

For petitions filed on or after November 13, 2018, a claim shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100 (2020). The Petition was accorded a filing date of June 7, 2021. Paper 3. Thus, we apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Under *Phillips*, claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims,

and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–17. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

Only terms that are in controversy need to be construed, and then only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (in the context of an *inter partes* review, applying *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999)).

Here, “Petitioner does not believe that any claim constructions are needed.” Pet. 12.

Patent Owner states “the Petition does not appear to present any issues that require the Board to construe the claims to resolve the issues at the institution stage.” Prelim. Resp. 31.

For purposes of this Decision, we do not find it necessary to expressly construe any claim terms.

D. Patentability Challenges

As indicated above, Petitioner presents four grounds challenging the patentability of particular claims of the ’090 patent under 35 U.S.C. § 103. Petitioner challenges (1) claims 1–5 and 9–13 over the teachings of Guccione and Woelfel; (2) claims 8 and 16 over the teachings of Guccione, Woelfel, and Song; (3) claims 1–5 and 9–13 over the teachings of Gemmill, and Woelfel; and (4) claims 8 and 16 over the teachings of Gemmill, Woelfel, and Song. Pet. 4.

1. *Principles of Law: Obviousness*

A claim is unpatentable under 35 U.S.C. § 103 if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations. *See Graham*, 383 U.S. at 17–18.

The Supreme Court has made clear that we apply “an expansive and flexible approach” to the question of obviousness. *KSR*, 550 U.S. at 415. Whether a patent claiming the combination of prior art elements would have been obvious is determined by whether the improvement is more than the predictable use of prior art elements according to their established functions. *Id.* at 417. Reaching this conclusion, however, requires more than a mere showing that the prior art includes separate references covering each separate limitation in a claim under examination. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness requires the additional showing that a person of ordinary skill at the time of the invention would have selected and combined those prior art elements in the normal course of research and development to yield the claimed invention. *Id.*

2. *Relevant Prior Art*

a) *Guccione (Ex. 1004)*

Guccione is a U.S. Patent Publication that published November 5, 2015, and claims priority to two provisional applications filed on December 12, 2012, and February 15, 2013 (Ex. 1004, code (60)), before the earliest priority date of the '090 Patent (Ex. 1001, code (63)). Petitioner asserts that Guccione is prior art under § 102(a)(2). Pet. 4.

Guccione describes techniques for “authenticating a user and/or a user equipment (UE)” when the user or UE “request[s] access to a service controlled by a service provider (SP).” Ex. 1004, code (57). Guccione further explains that authentication can be provided by single sign-on (SSO) services. *Id.* ¶ 28. “An entity that offers an SSO service may be referred to” in Guccione “as an Identity Provider (IdP).” *Id.* ¶ 28. As such, “a mobile network operator (MNO) that offers an SSO service and an independent entity,” i.e., a third party, “that offers an SSO service may both be referred to as an IdP.” *Id.* Figure 4 of Guccione is reproduced below.

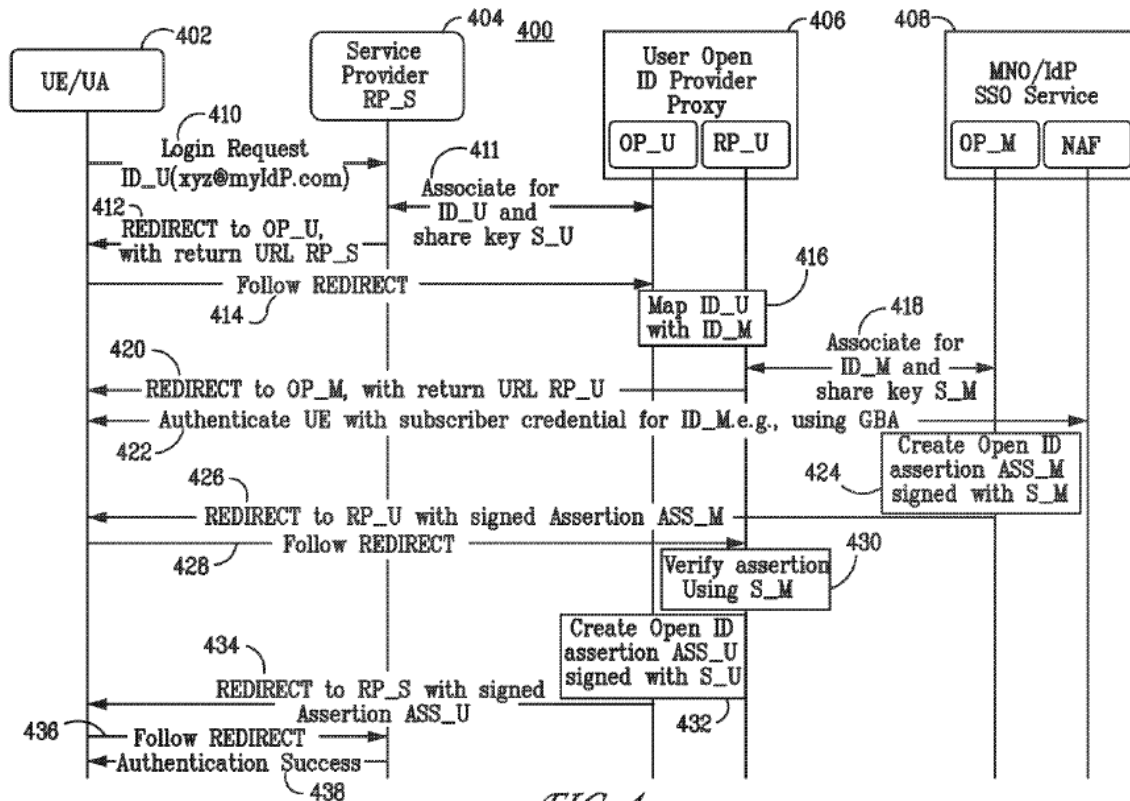


FIG. 4

Figure 4, above, is a flow diagram illustrating a technique in which an MNO authenticates a UE for access to a service. *Id.* ¶¶ 10, 52. As shown in Figure 4, network 400 includes UE 402, service provider SP 404, user IdP proxy 406 and MNO 408 (which also functions as an IdP). *Id.* ¶ 52. The authentication process begins at flow 410, where “the user wants to login to a service, and thus requests access to the service provided by the SP 404 using an original user identity (ID_U).” *Id.* In flows 412 and 414, UE 402 is redirected to user IdP proxy 406. *Id.* In flow 416, the original user identity ID_U is mapped to, and associated with, identifier ID_M that is known by the MNO 408. *Id.* ¶¶ 52–53. After the mapping and association of ID_M, UE 402 is redirected to the MNO 408 in flow 420. *Id.* ¶ 53. MNO 408 authenticates UE 402 using UE 402’s “subscriber credentials” in flow 422 and further creates and signs an “authentication assertion” in flow 424,

e.g., an Open ID assertion. *Id.* In flows 426 and 428, UE 402 is redirected to user IdP proxy 406, which, in flow 430, verifies the Open ID authentication assertion. *Id.* In turn, user IdP proxy 406 creates and signs a second Open ID authentication assertion in flow 432. *Id.* In flows 434–438, UE 402, along with the received second Open ID authentication assertion, is redirected to the user IdP proxy 406 which receives the second Open ID authentication assertion, authenticates UE 402, and, so, grants UE 402 access to the service provided by the SP 404. *Id.* The procedure described in Figure 4 is “a one-factor authentication” where the MNO 408 authenticates UE 402. *Id.* ¶ 54.

b) Gemmill (Ex. 1005)

Gemmill is a paper that published July 22, 2008 (Ex. 1005, 509), before the earliest priority date of the '090 Patent (Ex. 1001, code (63)). Petitioner asserts that Gemmill is prior art under § 102(a)(1). Pet. 4.

Gemmill describes the implementation of myVocs (my Virtual Organization Collaboration System) and Shibboleth to provide security and authentication for access to resources across different domains (e.g., resource providers such as Yahoo or Google). Ex. 1005, 509–510. Figure 2 of Gemmill is reproduced below.

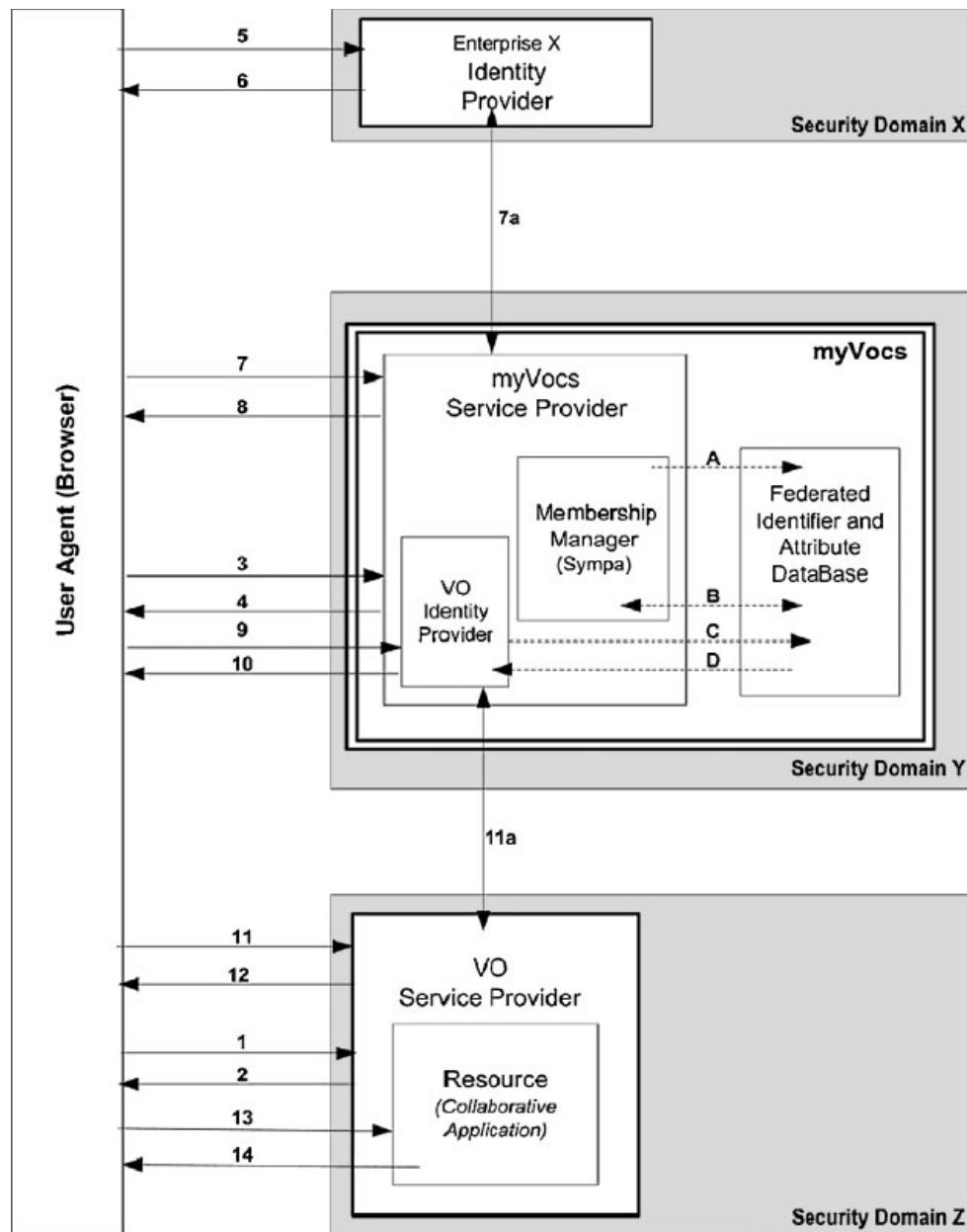


Figure 2, above, illustrates the myVocs architecture components and further shows message flows between those components. *Id.* at 518–519. Regarding the components shown in Figure 2, the myVocs system (shown in double-lined box) within Security Domain Y includes “(1) a Shibboleth SP labeled ‘myVocs Service Provider’, (2) a Shibboleth [Identity Provider (IdP)] labeled ‘[virtual organization (VO)] Identity Provider’, (3) a VO membership management system labeled ‘Membership Manager (Sympa)’,

and (4) a federated identifier and VO attribute data store labeled ‘Federated Identifier and Attribute Database.’” *Id.* at 518. Further shown, in Security Domain Z, is “a Shibboleth [Service Provider (SP)], labeled ‘VO Service Provider’ protects some resource on one of many distributed web servers.” *Id.* Still further shown, separately in Security Domain X, is a “Shibboleth IdP labeled ‘Enterprise X Identity Provider.’” *Id.* Gemmill explains that a “Shibboleth IdP exposes an enterprise identity management system by leveraging a local authentication service,” e.g., “a Shibboleth [single sign-on (SSO)] service.” *Id.* at 515. Gemmill also explains that a Shibboleth SP provides web-based content and resources. *Id.*

Figure 2 also shows the message flows between components that provide authentication for a web browser client’s, i.e., a User Agent, request for a resource from a VO Service Provider. *See id.* at 521–523. First, the “browser client requests a VO web resource protected by the VO SP” and is “redirected to the myVocs VO IdP component.” *Id.* at 522. In flow 3, the “client makes a Shibboleth Authentication Request to the VO IdP.” *Id.* The client is redirected to the appropriate IdP in flow 4 and, correspondingly, makes a Shibboleth Authentication Request to that IdP in flow 5 (i.e., to Enterprise X IdP). *Id.* In response to the Shibboleth Authentication Request, the IdP returns an authentication response to the client in flow 6. *Id.* Next, in flow 7, the client submits the authentication response to the SP at myVocs, where it is validated, and the client is redirected to the VO IdP in step 8. *Id.* The client again makes a Shibboleth Authentication Request to the VO IdP in flow 9; based on the previous authentication steps, a “security context” exists, and this time, the myVocs IdP authenticates the client based on the previous authentication response in flow 10. *Id.* With that authentication, next, in flows 11–14, the “client submits the authentication

response to the VO SP where the assertion is validated,” the client is directed to the VO resource, the client again requests the VO resource, and the resource is provided by the client. *Id.*

c) Woelfel (Ex. 1006)

Woelfel is a U.S. Patent Publication that published November 1, 2012, and claims priority to a provisional application filed on April 27, 2011 (Ex. 1006, codes (43), (60)), before the earliest priority date of the ’090 Patent (Ex. 1001, code (63)). Petitioner asserts that Woelfel is prior art under § 102(a)(1). Pet. 4.

Woelfel describes client-server communicating in a network in which “user authentication . . . is mediated by a proxy.” Ex. 1006 ¶ 2. Woelfel explains that a server may provide ““Software as a Service (SaaS),”” i.e., “[c]loud applications.” *Id.* ¶ 6. Woelfel also explains that “a Single Sign-On infrastructure enables users to sign in once and have access to all authorized resources” and further describes a “federated SSO strategy” that “involves cooperation between independent network entities cooperating in SSO.” *Id.* ¶ 4.

d) Song (Ex. 1007)

Song is a World Intellectual Property Organization International Application that published August 4, 2005 (Ex. 1007, code (43)), before the earliest priority date of the ’090 Patent (Ex. 1001, code (63)). Petitioner asserts that Song is prior art under § 102(a)(1). Pet. 4.

Song describes “centralized auditing of authentication, authorization and access control procedures for client computers to access networked servers and services.” Ex. 1007, 1:8–10. Song provides network access auditing when, e.g., the network “verifies the user’s identity, grants access rights to the identified user, [or] allows (or denies) the access request by the

access controller.” *Id.* at 4:18–24. Song does so by using a “transaction id, audit-request object and audit-response object” to “identify the transaction and log the events during the request process and response process.” *Id.* at 5:1–5:5. In particular, “the audit-response object can be just logged into a file.” *Id.* at 20:32–33.

E. Ground 1 - Obviousness over Guccione and Woelfel

Petitioner asserts claims 1–5 and 9–13 are obvious under 35 U.S.C. § 103 over the teachings of Guccione and Woelfel. Pet. 13–46. Claims 1 and 9 are independent and substantially identical, except that claim 1 recites a method and claim 9 recites a non-transitory computer readable medium. Patent Owner contests Petitioner’s evidence and arguments with respect to three limitations of the independent claims, namely, limitations 1[a][i], 1[b][iv], and 1[c], and the corresponding limitations of claim 9. *See* Prelim. Resp. 31–41. Patent Owner does not contest the remaining limitations of the independent claims. *See id.* Patent Owner additionally contests, however, Petitioner’s evidence and arguments with respect to Petitioner’s rationale to combine the teachings of the references. *See id.* at 41–43.

We address Patent Owner’s arguments as follows.

1. Limitation 1[a][i]

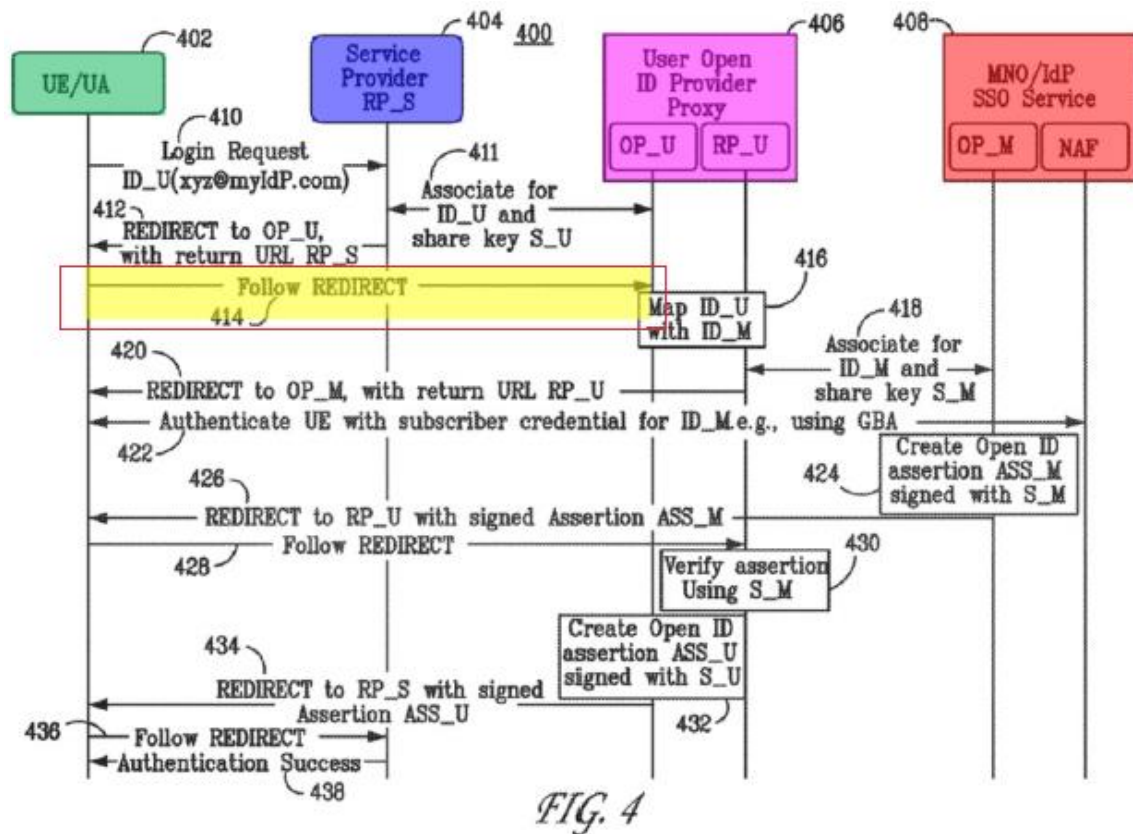
Limitation 1[a][i] recites “receiving, by a proxy server, a single-sign-on request from a device for access to an application program.” Ex. 1001, 13:58–59.

Patent Owner argues that Guccione does not teach this limitation because, “[t]he proxy server of Guccione does not receive the single-sign-on (SSO) request from the user device,” rather, “the Guccione proxy receives an association key provided by a service provider.” Prelim. Resp. 32 (citing Ex. 1004 ¶ 52). Patent Owner argues that Guccione makes “no mention of

any request being received by the IdP proxy 406 **from** the user device 402 as required by the claims.” Prelim. Resp. 33. Patent Owner also argues that a person of ordinary skill in the art “would understand that in the Guccione implementation, it is **the service provider 404** that provides the single sign-on request to the IdP proxy 406, not the client device 402.” *Id.* at 34 (citing Ex. 2001 ¶ 70).

Petitioner argues that Guccione discloses this limitation because “the user IdP proxy 406 (proxy server) receiv[es] a single-sign-on request from the UE 402 (device) for access to a service provided by SP 404 (application program).” Pet. 21 (citing Ex. 1002 ¶¶ 87–92). “At step 414,” Petitioner argues, “the UE 402 follows the redirect to the user IdP proxy 406 to request sign-on to the SP 404.” Pet. 22. Petitioner argues a person of ordinary skill in the art “would have understood that the request transmitted/received at step 414 was a ‘single-sign-on request.’” *Id.* (citing Ex. 1002 ¶¶ 87–92; Ex. 1004 ¶ 28, Fig. 1).

Contrary to Patent Owner’s arguments, on the current record, Petitioner has made a sufficient showing, at this stage of the proceeding, that Guccione teaches the subject matter of limitation 1[a][i]. Figure 4 of Guccione, annotated by Petitioner, is shown below.



Guccione’s Figure 4, annotated by Petitioner shown above, depicts a flow diagram for accessing a service using mobile subscriber credentials and a third party identity provider (IdP). Pet. 26; Ex. 1004 ¶ 10. According to Guccione, at 414 (shown in yellow), “the UE 402 is redirected to the user IdP proxy 406.” Ex. 1004 ¶ 52. As Dr. Franz explains, a person of ordinary skill in the art:

would have understood that the request transmitted/received at step 414 was a “single-sign-on request.” The UE was attempting to access the service provided by the SP at step 410, and the SP then caused the redirect of step 412 and step 414 in response. Hence, a [person of ordinary skill in the art] would have recognized that the message at step 414 was at least a request to sign-on. Moreover, Guccione labels the IdP (element 408) of Figure 4 as an “MNO/IdP SSO Service.” Guccione, Fig. 4. Hence, a POSITA [person of ordinary skill in the art] would have recognized that the sign-on service being provided by the user IdP proxy and IdP was a single-sign-on service, and thus the

request to invoke that service at step 414 was a single-sign-on request.

Ex. 1002 ¶ 88. Dr. Franz also testifies that Guccione “discloses that its techniques are used for single sign-on.” *Id.* ¶ 89 (citing Ex. 1004 ¶ 28).

On the current record, we agree with Petitioner that a person of ordinary skill in the art would understand from Guccione’s description of Figure 4 that user IdP proxy 406 (a proxy server) receives a single-sign-on request from UE 402 (a device) for access to a service provided by SP 404 (an application program), which amounts to receiving, by a proxy server, a single-sign-on request from a device for access to an application program.

Based upon this preliminary record, we are persuaded that Petitioner has demonstrated sufficiently that Guccione teaches the recited claim limitation.

2. Limitation 1[b][iv]

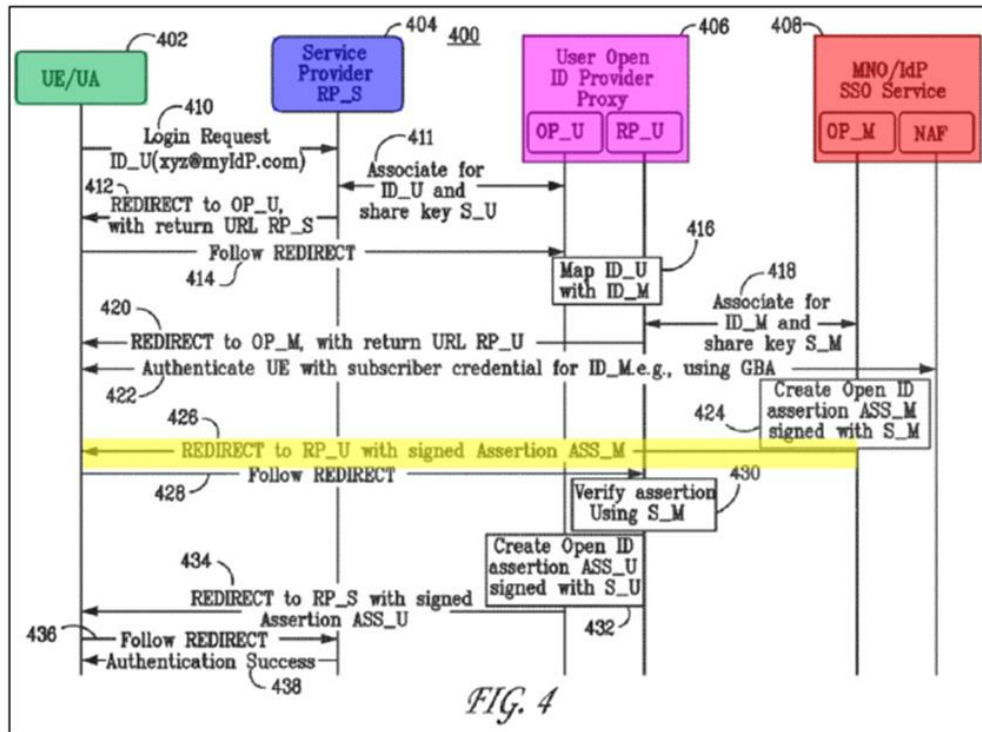
Limitation 1[b][iv] recites “the identity provider redirects the device to the cloud network location of the proxy server with a single-sign-on validation after validation of the single-sign-on request.” Ex. 1001, 14:3–6.

Patent Owner argues that Guccione does not teach this limitation because “[t]he IdP of Guccione does not validate based on the SSO [single sign-on] provided by the user device. Instead the Guccione IdP validates based on device hardware such as a phone, not a user entered SSO.” Prelim. Resp. 34. Patent Owner also argues that a person of ordinary skill in the art “would understand that the required validation of the single-sign-on request of the ’090 patent entails the user’s **identity** such as logins, authentication state, identifiers between the user’s online identity and the service provider.” Prelim. Resp. 36 (citing Ex. 2001 ¶¶ 79–82).

Patent Owner also argues that “Guccione discloses matching the user identity with either (1) the phone number, a number associated with *the device* and not the identity of the user or (2) the international mobile subscriber identity (IMSI), a number that is also provided *in the hardware* such as SIM card R-UIM card,” and that “Guccione’s identity authentication method is inevitably constrained to devices with User Identifiers (ID_U).” Prelim. Resp. 37–38 (citing Ex. 1004 ¶¶ 51–52; Ex. 2001 ¶ 82). Patent Owner argues that “[s]uch User Identifiers are specifically tied to a smart phone,” and that other user devices, such as laptops or desk computers, “will not be able to authenticate the identity of the cloud identity user” with Guccione’s method. Prelim. Resp. 38 (citing Ex. 2001 ¶¶ 79–82). Patent Owner argues, “this is not the required single sign-on validation.” Prelim. Resp. 38.

Patent Owner further argues that “neither Guccione nor Woelfel disclose the required ‘a **cloud** network location of the proxy server.’” Prelim. Resp. 38. Patent Owner also argues that “the Woelfel reference actually teaches away from use of a proxy in the cloud,” because “Woelfel’s PRS Reverse Proxy is not a cloud-based system and does not have a cloud-based address.” Prelim. Resp. 38–39 (citing Ex. 2001 ¶ 95).

Petitioner asserts that Guccione teaches the recited limitation, and provides an annotated version of Guccione’s Figure 4, shown below, to support its position.



Guccione’s Figure 4, annotated by Petitioner above, depicts a flow diagram for accessing a service using mobile subscriber credentials and a third party identity provider (IdP). Pet. 33; Ex. 1004 ¶ 10. Petitioner argues that Guccione teaches this limitation because at step 426 (annotated in yellow), Guccione shows “that the IdP 408 (identity provider) [annotated in red] redirects the UE 402 (device) [annotated in green] to the cloud network location of the user IdP proxy 406 (proxy server) [annotated in pink] with a single-sign-on validation after validation of the single-sign-on request.” Pet. 31 (citing Ex. 1002 ¶¶ 114–117; Ex. 1004 ¶ 53, Fig. 4). Petitioner explains that “[t]he redirect at step 426 occurs after the single-sign-on validation performed by the IdP 408 at step 424.” Pet. 31–32 (citing Ex. 1004 ¶ 53, Fig. 4). Petitioner argues that a person of ordinary skill in the art “would have recognized that the assertion ASS_M was a ‘single-sign-on validation’ at least because it indicated the result of performing the validation (at step

422) for the single-sign-on request that the user initiated previously.” Pet. 32 (citing Ex. 1002 ¶¶ 114–117).

Dr. Franz testifies that a person of ordinary skill in the art “would have recognized that step 422 is the activity that results in the user being authenticated. And then step 424 is the activity that results in the single-sign-on validation being generated.” Ex. 1002 ¶ 117. According to Dr. Franz, a person of ordinary skill in the art “would have understood that the redirect message at step 426 included a single-sign-on validation made after validation of the single-sign-on request.” *Id.*

Petitioner also argues that Guccione’s IdP proxy 406 is located in a “cloud network location.” Pet. 32 (citing Ex. 1002 ¶¶ 114–117). Petitioner argues a person of ordinary skill in the art “would have understood that a ‘redirect’ in the context of network communications, as labelled for step 426, would have indicated sending a network location of a target device, and in this case a cloud network location of the user IdP proxy.” Pet. 32 (citing Ex. 1002 ¶¶ 114–117).³

Dr. Franz explains that a person of ordinary skill in the art:

would have understood that a “redirect” in network communications was typically performed by having a server receive a message from a client and then send back a command to the client to visit a new network location. In the context of Internet communications and the service providers described by Guccione, this would typically be implemented by a server sending a new URL to the client and an instruction for the client to visit the server at that new URL.

³ Petitioner asserts that “[t]o the extent Guccione did not explicitly disclose that the user IdP proxy was located at a ‘cloud’ network location, a POSITA would have found that to be an obvious modification based on the teachings of Woelfel.” Pet. 32 (citing Ex. 1002 ¶¶ 114–117). We discuss Petitioner’s assertion in Section II.E.5.

Ex. 1002 ¶ 94.

Dr. Franz goes on to explain that a person of ordinary skill in the art: would have recognized that this was a “cloud” network location for the user IdP proxy. At the time of the priority date of the ’090 Patent, a “cloud” network location would have been understood by a POSITA to refer to a network location accessible over the Internet. This would be in contrast to a network location that was, for example, only accessible on a company’s private network, only on a local area network, etc. Because the user IdP proxy disclosed in Guccione’s Figure 4 was accessible ty [sic] third-party SPs for implementation of the federated authentication model, a POSITA would have understood that the user IdP proxy was at an Internet-based, cloud network location in order to facilitate access by those third-party SPs’ users (including the UE of Figure 4).

Id. ¶ 95.

Dr. Franz further testifies that a person of ordinary skill in the art: would have understood that the user IdP proxy was accessible by the UE over the Internet based on the redirect sent by the SP at step 412. Guccione explained that the Internet could be one of the networks used in its system of Figure 4. [Ex. 1004] ¶ 2, ¶¶ 71–73. That alone would have indicated to a POSITA that the user IdP proxy was located at a “cloud” network location. Also, though, a POSITA would have understood that the purpose of the OpenID protocol, described by Guccione for Figure 4, was to allow service providers to access third-party identity providers in a federated model over the Internet. Guccione’s description of the SP, IdP, and user IdP proxy are fully consistent with that typical usage. This additionally would have indicated to a POSITA that the user IdP proxy was located at a “cloud” network location.

Ex. 1002 ¶ 96.

Contrary to Patent Owner’s arguments, on the current record, Petitioner has made a sufficient showing that Guccione teaches the recited single sign-on validation. Patent Owner’s arguments that Guccione’s IdP

validates based on device hardware such as a phone, and not a user entered SSO, do not address the plain language of the claim. For example, claim 1 recites in pertinent part, “receiving, by a proxy server, a single-sign-on request from a *device*” . . . “directing, by the proxy server, the *device* to an identity provider” . . . “the identity provider redirects the *device* to the cloud network location.” Ex. 1001, 13:58–59, 13:64–65, 14:3–4. The communication described in claim 1 occurs between the recited *device* and the proxy server, application server, and the identity provider. On its face, claim 1 does not expressly recite, nor require, as Patent Owner appears to argue, exclusive use of a “user’s ***identity*** such as logins, authentication state, [or] identifiers between the user’s online identity and the service provider” for purposes of a single sign-on request or validation. Prelim. Resp. 36. Nor does claim 1 expressly preclude the manner in which Guccione teaches a single sign-on request and validation as described by Petitioner.

Based upon this preliminary record, we are persuaded that Petitioner has demonstrated sufficiently that Guccione teaches the recited claim limitation.⁴

3. *Limitation 1[c]*

Limitation 1[c] recites “receiving, at the proxy server, the single-sign-on validation from the device.” Ex. 1001, 14:7–8.

Patent Owner argues that “the authentication performed at the MNO (the IdP equivalent) in Guccione is not a single-sign-on validation and therefore, what the proxy server receives after the MNO authentication cannot be the requisite single-sign-on validation.” Prelim. Resp. 41.

⁴ Because we find that Guccione teaches the recited limitation, we do not reach Patent Owner’s “teaching away” argument with respect to Woelfel for this limitation.

Petitioner argues that Guccione discloses this limitation because “the user IdP proxy 406 receives the assertion ASS_M (single-sign-on validation) from the UE 402 (device).” Pet. 33 (citing Ex. 1002 ¶ 118). “At step 428,” Petitioner argues, “the UE 402, which had received a redirect with the signed assertion ASS_M from the IdP 408 (see step 426), follows the redirect to the user IdP proxy 406.” Pet. 33 (citing Ex. 1004 ¶ 53, Fig. 4). Petitioner argues, “[t]he user IdP proxy then verifies the assertion ASS_M at step 430.” *Id.*

Petitioner also argues that a person of ordinary skill in the art “would have recognized that the assertion ASS_M was a ‘single-sign-on validation’ at least because it indicated the result of performing the validation (at step 422) for the single-sign-on request that was initiated earlier.” Pet. 33–34. “Therefore,” Petitioner argues, a person of ordinary skill in the art “would have understood that at the completion of step 428, the user IdP proxy 406 received the single-sign-on validation from the UE 402.” *Id.* at 34 (citing Ex. 1004 ¶ 53, Fig. 4; Ex. 1002 ¶ 118).

Based upon this preliminary record, we are persuaded that Petitioner has demonstrated sufficiently that Guccione teaches the recited claim limitation, whose evidence and arguments are supported by the testimony of Dr. Franz. *See* Ex. 1002 ¶ 118.

4. *Uncontested Limitations*

Patent Owner does not contest Petitioner’s evidence and arguments that the relied upon prior art meets the remaining portions of independent claim 1, namely 1[pre], 1[a][ii–iii], 1[b][i–iii], 1[d], and 1[e][i–iii], as well as the corresponding portions of independent claim 9. *See* Prelim. Resp. 31–41.

We have considered Petitioner’s evidence and arguments, as well as the testimonial evidence of Dr. Franz with respect to these portions of independent claims 1 and 9.⁵

Based on this preliminary record, we are persuaded that Petitioner has demonstrated sufficiently that Guccione teaches the uncontested portions of independent claims 1 and 9.

5. *Rationale to Combine Guccione and Woelfel*

Limitation 1[a][ii] recites “the device directed by an application server to a cloud network location of the proxy server.” Ex. 1001, 13:59–61.

Limitation 1[b][iv] recites “the identity provider redirects the device to the cloud network location of the proxy server with a single-sign-on validation after validation of the single-sign-on request.” Ex. 1001, 14:3–6. With respect to these limitations, Petitioner asserts that a person of ordinary skill in the art “would have found it obvious to provide the user IdP proxy 406 at a cloud network location based on Woelfel’s teaching of cloud implementations in the federated authentication model used in [Guccione and Woelfel].” Pet. 42; *see also id.* at 24–25, 32–33.⁶

Petitioner also argues that a person of ordinary skill in the art “would have been motivated to, and would have found it obvious to, provide the entities in Guccione at cloud network locations because that was the

⁵ The issue of whether the preambles of claims 1 and 9 are limiting need not be resolved at this stage of the proceeding because, regardless of whether they are limiting, Petitioner shows sufficiently for purposes of institution that the recitations in the preambles are satisfied by the prior art.

⁶ Petitioner also asserts that dependent claims 5 and 13 would have been obvious over the combined teachings of Guccione and Woelfel. Pet. 19. We address Petitioner’s arguments with respect to these dependent claims in Section II.E.6.

ordinary arrangement for such entities in the federated authentication model.” Pet. 24 (citing Ex. 1002 ¶¶ 93–102).

Dr. Franz testifies that a person of ordinary skill in the art:

would have found it obvious to modify Guccione to provide the user IdP proxy is located at a “cloud” network location based on the relevant teachings of Woelfel. Woelfel, like Guccione, disclosed a federated authentication model, or “federated SSO strategy.” [Ex. 1006 ¶ 4.] It describes that, in this model, the authentication was implemented based on “cooperation between independent network entities.” [*Id.*] And those entities are located at cloud network locations, like “Cloud applications.” [*Id.*] ¶ 6, Fig. 1. A POSITA would have recognized that Woelfel was describing the typical arrangement, i.e., in the cloud, of the entities in a federated authentication model, and so a POSITA would have been motivated to use the same typical arrangement for the entities in Guccione’s Figure 4.

Ex. 1002 ¶ 98.

Dr. Franz further testifies that “Woelfel also demonstrates that it would have been obvious to use a cloud network location of the user IdP proxy in the redirect at step 412. For the same reasons, Woelfel also demonstrates that it would have been obvious to use the cloud network location of the user IdP proxy in the redirect at step 426.” Ex. 1002 ¶ 116.

Patent Owner asserts that “Petitioner’s minimal analysis of the combination of Woelfel and Guccione fails to teach the SSO validation of the ’090 patent.” Prelim. Resp. 41. Patent Owner argues that Petitioner fails to “explain how a POSITA would combine Woelfel’s teachings of cloud implementations in the federated authentication model with that of Guccione.” *Id.* at 42. Patent Owner argues that “there is a complete lack of explanation on *how or why a POSITA would be able to implement the teachings of ‘the cloud features’ from Woelfel in combination with Guccione.*” *Id.*

Petitioner's obviousness analysis with respect to these limitations is deficient in that it does not provide an adequate articulation of the necessary factual analysis set forth in *Graham*. For example, the Petition's obviousness analysis with respect to these limitations does not articulate sufficiently how the teachings of Guccione and Woelfel would have been combined, and why such a combination would have been desirable to one of skill in the art.

On this record, we are not persuaded that Petitioner has demonstrated sufficiently that the combined teachings of Guccione and Woelfel satisfy limitations 1[a][ii] and 1[b][iv]. We determine, on the current record however, that Petitioner demonstrates sufficiently that Guccione alone satisfies limitations 1[a][ii] and 1[b][iv].

6. *Dependent Claims 2–5 and 10–13*

Petitioner argues that the combined teachings of Guccione and Woelfel meet the recited limitations of claims 2–5 and 10–13. *See* Pet. 40–41 (claims 2 and 10), 41–43 (claims 3 and 11), 43–44 (claims 4 and 12), and 44–46 (claims 5 and 13).

Patent Owner does not substantively address Petitioner's evidence or arguments with respect to these dependent claims. *See generally* Prelim. Resp.

We have considered Petitioner's evidence and arguments as well as the testimonial evidence of Dr. Franz with respect to these dependent claims. We additionally address dependent claims 5 and 13 in more detail.

Dependent claims 5 and 13 recite similar limitations, but depend from different independent claims, 1 and 9, respectively. Dependent claims 5 and 13 recite in pertinent part “wherein the proxy server and the identity

provider exchange data using a Security Assertion Markup Language data format.” Ex. 1001, 14:24–36, 15:47–50.

Petitioner points out that Guccione teaches “the user IdP proxy 406 (proxy server) and the IdP 408 (identity provider) exchange data using the OpenID data format.” Pet. 44 (citing Ex. 1004 ¶¶ 51–52, Fig. 4). Petitioner argues that a person of ordinary skill in the art “would have understood that OpenID and SAML were the two primary protocols used for federated authentication at the time of the alleged invention.” Pet. 44 (citing Ex. 1002 ¶¶ 145–150). Petitioner points out that “Woelfel discloses a system that uses the other one of these two protocols (i.e., SAML).” Pet. 45 (citing Ex. 1006 ¶¶ 5, 95–105, 112).

Petitioner argues that a person of ordinary skill in the art “would have recognized that different IdPs would support different federated authentication protocols.” Pet. 45 (citing Ex. 1002 ¶¶ 145–150). Petitioner also argues that a person of ordinary skill in the art “would have understood the use of a SAML assertion instead of an OpenID assertion as the mere substitution of one well-known technique for another to achieve the same predictable results.” *Id.* Petitioner further argues that “[i]n order to allow [Guccione’s] user IdP proxy 406 to communicate with as many IdPs as possible, a [person of ordinary skill in the art] would have been motivated to support SAML communications between the IdP proxy 406 and the IdP 408, and use SAML where OpenID was not supported by the IdP 408.” *Id.*

We find that Petitioner’s evidence sufficiently demonstrates the prior art teaches the limitations of claims 5 and 13, and that a sufficient rationale to combine the references has been provided. We also determine that, on this record, Petitioner has provided sufficient evidence of Guccione’s teachings of the limitations of claims 2–4 and 10–12.

Accordingly, based on this preliminary record, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Guccione and Woelfel meet the recited limitations of dependent claims 2–5 and 10–13, and sufficient evidence of a rationale to combine the references has been provided.

7. Conclusion as to Ground 1

Based on the record presented, we are persuaded Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to claims 1–5 and 9–13 under 35 U.S.C. § 103(a) as obvious over the teachings of Guccione and Woelfel.

F. Ground 2 - Obviousness over Guccione, Woelfel, and Song

Petitioner argues that the combined teachings of Guccione, Woelfel, and Song meet the recited limitations of dependent claims 8 and 16. *See* Pet. 46–50.

Dependent claim 8 recites “[t]he method as recited in claim 1, further comprising: logging, by the proxy server, network requests from user devices to applications; creating a report relating to resource accesses based on the logged network requests.” Ex. 1001, 14:60–64.

Dependent claim 16 recites “[t]he non-transitory computer readable medium as recited in claim 9, wherein the software instructions when executed by the one or more processors further cause performance of: logging, by the proxy server, network requests from user devices to applications; creating a report relating to resource accesses based on the logged network requests.” Ex. 1001, 16:13–20.

Petitioner concedes that “[n]either Guccione nor Woelfel discloses logging network requests from devices to applications, nor creating a report

based on that logged information;” Petitioner asserts, however, that “Song discloses these features.” Pet. 49.

Petitioner asserts that “Song discloses a proxy server logging network requests from user devices to applications.” Pet. 50 (citing 1007 ¶¶ 29, 80–84, 119–138, Fig. 8; Ex. 1002 ¶¶ 238–240). Petitioner argues that a person of ordinary skill in the art “would have found it obvious to modify the system of Guccione to include logging and reporting functionality in the user IdP proxy 406, such as described by Song.” Pet. 49. Petitioner also argues that a person of ordinary skill in the art “would have been motivated to add logging/reporting functionality to [Guccione’s] user IdP proxy 406 for several reasons.” *Id.*

“First,” Petitioner argues, “logging/reporting was a well-known feature in computer systems, and in server systems in particular.” *Id.* (citing Ex. 1002 ¶¶ 230–236). “For example,” Petitioner argues, “logging and reporting allowed software engineers to monitor how their resources were being used and trace the cause of problems.” *Id.* Petitioner argues that a person of ordinary skill in the art “would have been motivated to add logging/reporting to obtain these benefits.” *Id.*

“Second,” Petitioner argues, “the interest in logging/reporting was increasing due to the increasing complexity of networked computer systems.” *Id.* (citing Ex. 1007 ¶ 3). “The increasing complexity of networked systems, and their increasing distribution across independent entities,” Petitioner argues, “meant that visibility into system usage had actually decreased.” Pet. 49 (citing Ex. 1002 ¶¶ 230–236). Petitioner argues that a person of ordinary skill in the art “would have been motivated to add logging and monitoring functionality—especially in a multi-server arrangement—in order to address this reduced visibility.” *Id.*

“Third,” Petitioner argues, a person of ordinary skill in the art “would have been motivated to add logging/reporting to the user IdP proxy 406 of Guccione based on Song’s explicit suggestion to do so.” Pet. 50. “In Song’s system,” Petitioner argues, “a proxy server, the Security Proxy Server, participates in the logging and stores the log report.” *Id.* (citing Ex.1007 ¶¶ 99, 102, 127–138, Fig. 8). “Song especially recommends,” Petitioner argues, “that the proxy server that proxies authentication server requests (i.e., the security proxy server) be used as the ‘centralized audit point’ for persisting the final audit object with all logging data.” Pet. 50 (citing Ex. 1007 ¶¶ 102, 138). Petitioner argues a person of ordinary skill in the art “would thus have been motivated to have [Guccione’s] user IdP proxy 406 perform logging and reporting per Song’s teaching.” *Id.* (citing Ex. 1002 ¶¶ 230–236).

Petitioner also argues that a person of ordinary skill in the art “would have had a reasonable expectation of success in adding Song’s functionality to Guccione’s system, at least because that HTTP header-based approach would have been compatible with the OpenID and SAML implementations of Guccione and Woelfel.” Pet. 50 (citing Ex. 1002 ¶¶ 230–236).

Petitioner further argues that a person of ordinary skill in the art “would have recognized that when [Guccione’s] user IdP proxy 406 implemented the logging activities taught in Song, the user IdP proxy 406 would log both the request received from the UE 402 (step 414) and also the SP 404 with which the request is associated, as indicated by the relationship previously established between the SP 404 and the user IdP proxy 406 (step 411).” Pet. 51 (citing Ex. 1004 ¶ 52, Fig. 4; Ex. 1002 ¶¶ 238–240). “At least by logging this information in the audit object,” Petitioner argues, “the user IdP proxy 406 would log network requests from the UE 402 to the

services associated with the SP 404 (applications).” *Id.* (citing Ex. 1002 ¶¶ 238–240).

Petitioner also argues that Song discloses “a proxy server creating a report relating to resource accesses based on the logged network requests, at least in the form of storing the final version of the audit object at the security proxy server.” Pet. 51 (citing Ex. 1007 ¶¶ 62–63, 80, 99, 102, 119–138, Fig. 8; Ex. 1002 ¶¶ 241–243). “In addition,” Petitioner argues, “because Song disclosed an auditor reviewing audit information ‘to trace a user’s activities,’ in a system that generates audit trails,” a person of ordinary skill in the art “would have recognized that Song disclosed the creation of a report based on the logged network accesses at least in the form of the generated audit trails.” Pet. 51 (citing Ex. 1007 ¶ 6, Ex. 1002 ¶¶ 241–243).

Patent Owner argues that Petitioner has failed to show how the prior art “disclose[s] or renders obvious various limitations of independent claims 1 and 9,” and therefore Ground 2 fails for the reasons discussed with respect to those claims. Prelim. Resp. 56.

Based on this record, we are persuaded that Petitioner has demonstrated sufficiently for purposes of institution that the combined teachings of Guccione, Woelfel, and Song meet the recited limitations of dependent claims 8 and 16 and sufficient rationale to combine the references has been provided.

We are also persuaded Petitioner has demonstrated a reasonable likelihood of prevailing in its challenge to claims 8 and 16 under 35 U.S.C. § 103(a) as obvious over the teachings of Guccione, Woelfel, and Song.

G. Grounds 3 and 4 - Obviousness over Gemmill, Woelfel, and Song

For Ground 3, Petitioner asserts claims 1–5 and 9–13 are obvious under 35 U.S.C. § 103 over the teachings of Gemmill and Woelfel. Pet. 52–

84. For Ground 4, Petitioner asserts claims 8 and 16 are obvious under 35 U.S.C. § 103 over the teachings of Gemmill, Woelfel, and Song. Pet. 84–87. Petitioner provides the testimony of Dr. Franz in support of its challenge to claims 1–5 and 9–13 (Ground 3) (Ex. 1002 ¶¶ 252–338) and claims 8 and 16 (Ground 4) (Ex. 1002 ¶¶ 387–400).

Patent Owner contests Petitioner’s evidence and arguments with respect to certain limitations of independent claims 1 and 9 (Prelim. Resp. 44–53) and Petitioner’s rationale to combine the prior art’s teachings (*id.* at 53–55). Patent Owner provides the testimony of Dr. Nielson in support of its position. Ex. 2001 ¶¶ 107–134.

The U.S. Supreme Court, in *SAS Institute, Inc. v. Iancu*, 138 S. Ct. 1348 (2018), held that an *inter partes* review must institute on all challenged claims or no challenged claims. The Patent Office has further determined that, if instituting a review in an AIA trial proceeding, the Board will institute on all challenged claims *and all grounds*. Consolidated Trial Practice Guide 64,⁷ *see also PGS Geophysical AS v. Iancu*, 891 F.3d 1354, 1360 (Fed. Cir. 2018) (“Equal treatment of claims and grounds for institution purposes has pervasive support in SAS.”).

Because we determine that the information in the Petition adequately supports Grounds 1 and 2 for all Challenged Claims, we do not reach Petitioner’s alternative Grounds 3 and 4 at this stage of the proceeding. We emphasize that Grounds 3 and 4 are part of the trial and will be evaluated during trial.

⁷ Available at <https://www.uspto.gov/TrialPracticeGuideConsolidated> (Nov. 2019).

III. CONCLUSION

For the foregoing reasons, we are persuaded that the Petition demonstrates a reasonable likelihood of prevailing in showing the unpatentability of at least one of the challenged claims of the '090 patent.

IV. ORDER

Accordingly, it is

ORDERED that an *inter partes* review is instituted as to all challenged claims on the grounds raised in the Petition; and

FURTHER ORDERED that *inter partes* review is instituted commencing on the entry date of this Order, and pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4, notice is hereby given of the institution of a trial.

FOR PETITIONER:

Thomas Millikan
Babak Tehrani
Kyle Canavera
PERKINS COIE LLP
millikan-ptab@perkinscoie.com
tehranchi-ptab@perkinscoie.com
canavera-ptab@perkinscoie.com

FOR PATENT OWNER:

Ben Yorks
Babak Redjaian
IRELL & MANELLA LLP
byorks@irell.com
bredjaian@irell.com