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Paper 32
Entered: June 8, 2023

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZYNGA INC.,
Petitioner,

v.

IGT,
Patent Owner.

IPR2022-00199
Patent 7,168,089 B2

Before HUBERT C. LORIN, SCOTT A. DANIELS, and BARBARA A. PARVIS, *Administrative Patent Judges.*

DANIELS, *Administrative Patent Judge*.

JUDGMENT
Final Written Decision
Determining All Challenged Claims Unpatentable
35 U.S.C. § 318(a)

I. INTRODUCTION

Zynga Inc. ("Zynga" or "Petitioner") filed a Petition requesting *inter partes* review of claims 28–29, 31–33, 47–50, 84–86, 90–92, and 99–100 of U.S. Patent No. 7,168,089 B2 (Ex. 1001, "the '089 patent"). Paper 1 ("Pet."). IGT ("IGT" or "Patent Owner") filed a Preliminary Response to the Petition. Paper 6 ("Prelim. Resp.").

Among other things in the Preliminary Response, Patent Owner argued that interference estoppel under 37 C.F.R. § 41.127 bars Petitioner from challenging the '089 patent on "the obviousness grounds it now seeks in the IPR." Prelim. Resp. 12. Also, upon Patent Owner's request, and Petitioner's agreement, we authorized Patent Owner to submit in this proceeding, as an exhibit, the invalidity contentions filed by Petitioner in the related district court case. Paper 7. We also authorized Petitioner a Reply, and Patent Owner a Sur-reply, to address specific *Fintiv* issues relating to the trial date in the parallel district court litigation as well as the interference estoppel issue. *Id.* Petitioner subsequently filed a Reply (Paper 8) and Patent Owner filed a Sur-Reply (Paper 10).

We instituted trial for claims 28–29, 31–33, 47–50, 84–86, 90–92, and 99–100 of the '089 patent on all grounds of unpatentability alleged in the Petition. Paper 11 ("Decision to Institute" or "Inst. Dec.").

Following entry of our Institution Decision, Patent Owner filed a Request for Rehearing and Precedential Opinion Panel review with respect to the Board's decision to waive any effects of § 41.127 in this proceeding and our determination that Petitioner is not barred from pursuing *inter partes* review of the '089 patent. We denied the Request for Rehearing on August 22, 2022. Paper 13. Director Vidal, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and

Trademark Office, *sua sponte* granted Director Review, affirming our Decision on Institution. Paper 17.

Subsequently, Patent Owner filed a Patent Owner Response, ("PO Resp.," Paper 19), along with a declaration by Patent Owner's declarant, Dr. Craig Wills (Ex. 2031). Patent Owner again raises the issue of interference estoppel in its Response. PO Resp. 58–64. Petitioner timely filed a Reply ("Pet. Reply," Paper 22). Patent Owner filed a Sur-Reply ("PO Sur-Reply," Paper 23) to address certain arguments raised by Petitioner in its Reply.

A hearing for this proceeding was held on March 13, 2023. The transcript of the hearing has been entered into the record. Paper 31 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a).

For the reasons that follow, we determine that Petitioner has met its burden of showing by a preponderance of the evidence that claims 28–29, 31–33, 47–50, 84–86, 90–92, and 99–100 are unpatentable.

A. Real Parties in Interest

Petitioner states that Zynga Inc., is the real party in interest. Pet. 4. Patent Owner states that IGT is the real party in interest. Paper 3.

B. Related Matters

The parties state that the '089 patent was asserted in *IGT v. Zynga Inc.*, Case No. 6:21-cv-00331 (W.D. Tex.). Pet. 4; Paper 3, 1. Petitioner and Patent Owner are parties to the following additional *inter partes* review proceedings: IPR2022-00200 (U.S. Patent No. 8,795,064), IPR2022-00223 (U.S. Patent No. 7,303,473), and IPR2022-00368 (U.S. Patent No. 8,266,212). Petitioner informs us that, other than being directed to the

same general technological field, these patents are not directly related to the '089 patent. Pet. 5.

C. The '089 Patent (Ex. 1001)

The '089 patent is titled "Secured Virtual Network in a Gaming Environment" and discloses gaming machines and secure communications for transferring gaming software and information between a gaming machine and a gaming server. Ex. 1001, code (54), Abstract. The '089 patent explains that "the transfer of gaming software between the two gaming devices may be authorized and monitored by a software authorization agent." *Id.* code (54). Figure 8 of the '089 patent is reproduced below.

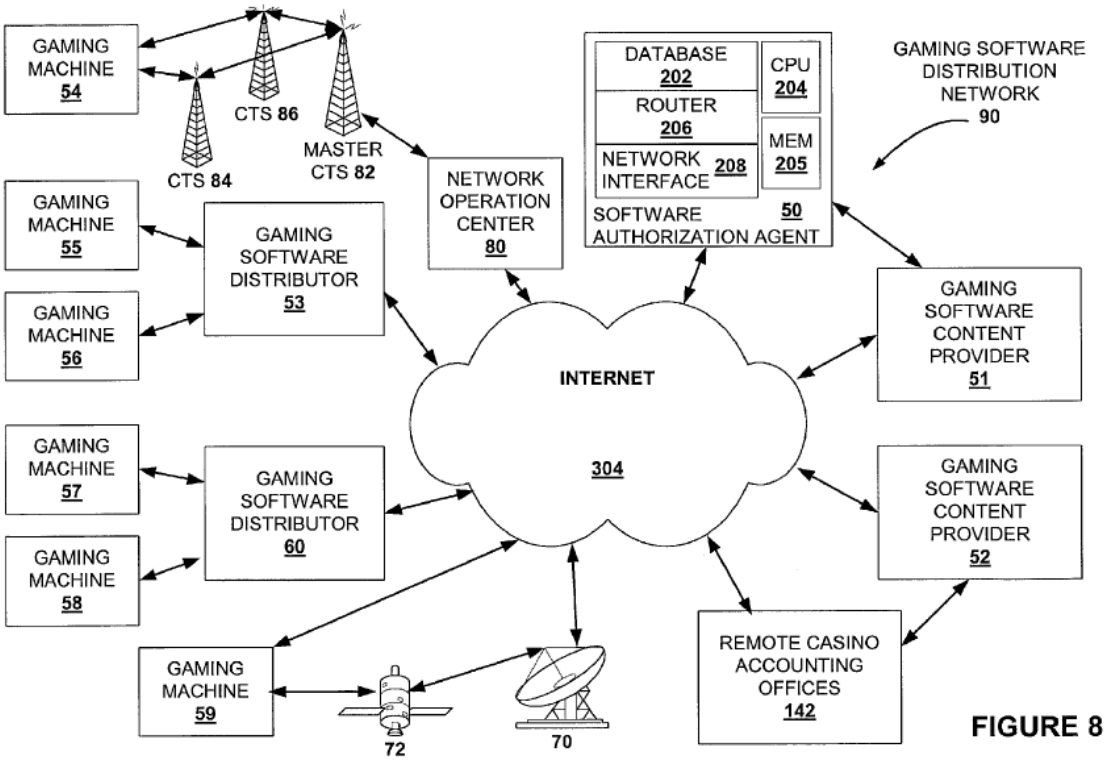


FIGURE 8

Figure 8 of the '089 patent is a block diagram illustrating gaming software distribution network 90, including, e.g., gaming machine 57 communicating with gaming software distributor 60, which in turn communicates via internet 304 with software authorization agent 50. The '089 patent describes that the "software authorization agent" "facilitate[s] a transfer of gaming

software" by authenticating gaming machines and "approv[ing] or reject[ing] the transfer of gaming software" to those machines. *Id.* at 4:41–56. The "gaming software authorization agent . . . allow[s] gaming software to be electronically transferred between gaming devices . . . in a manner that may be easily monitored and regulated." *Id.* at 25:1–5. Figure 9 of the '089 patent is reproduced below.

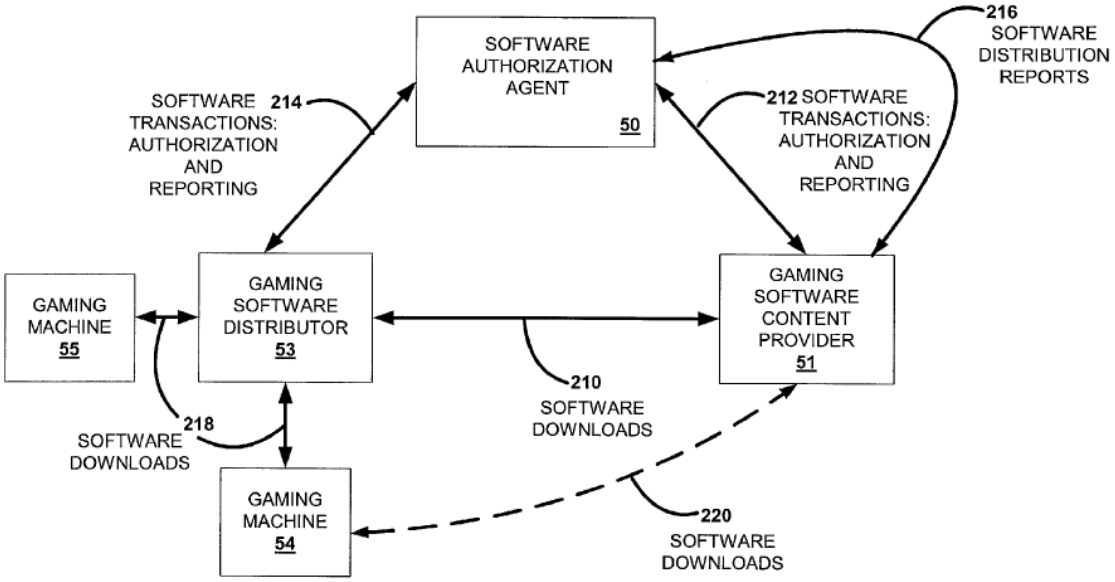


FIGURE 9

Figure 9 of the '089 patent, above, is a block diagram illustrating transactional communications between gaming machine 55, gaming software distributor 53, gaming software content provider 51, and software authorization agent 50. Considering Figures 8 and 9, the '089 patent describes that

> the gaming software distributor 53, which may be a game server maintained by a casino, may contact the software authorization agent 50 to request a transfer of gaming software from the gaming software provider 51 to the gaming distributor 53. The gaming distributor may also contact the software authorization agent to request a transfer of gaming software from the gaming

> software provider 51 to another gaming device such as gaming machine [54].

Id. at 28:40–47.

The '089 patent explains, and also claims, that "gaming software" can include "a) a game of chance played on a gaming machine, b) a bonus game of chance played on a gaming machine, c) a device driver for a [] device installed on a gaming machine and d) a player tracking service on a gaming machine." Ex. 1001, 10:58–63. The '089 patent further describes that "[t]he gaming software may comprise one or more gaming software components. The gaming software may be used to upgrade a gaming software component on one of the gaming devices and may be used to correct an error in a gaming software component on one of the gaming devices." *Id.* at 10:63–67.

D. Challenged Claims[1]

Claims 28 and 84 are independent. Each of claims 29, 31–33, 47–50, 85–86, 90–92, and 99–100 ultimately depend from one of independent claims 28 and 84. Claim 28 is reproduced below and illustrates the claimed subject matter:

> 28. [28-p] In a software authorization agent, a method of regulating a transfer of gaming software between two gaming devices, the method comprising:
>
> [28-1] receiving a gaming software download request message with gaming software transaction information from a first gaming device;
>
> [28-2] validating the gaming software download request using the gaming software transaction information;

[1] We refer to Zynga's claim limitation numbering scheme [28-p]–[28-4].

> [28-3] sending an authorization message to the first gaming device wherein the authorization message includes information indicating whether the first gaming device is authorized to transfer the gaming software to a second gaming device and wherein the first gaming device and the second gaming device are from the software authorization agent;
>
> [28-4] wherein the gaming software is for at least one of a) a game of chance played on a gaming machine, b) a bonus game of chance played on a gaming machine, c) a device driver for a [] device installed on a gaming machine, d) a player tracking service on a gaming machine and e) an operating system installed on a gaming machine.

Ex. 1001, 43:21–43 (emphasis added).

E. Prior Art and Asserted Grounds

Petitioner asserts that claims 28–29, 31–33, 47–50, 84–86, 90–92, and 99–100 would have been unpatentable on the following grounds:[2]

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
28–29, 31–33, 47–48, 84–86, 90–92, 99–100	103(a)	Goldberg[3] and Olden[4]
49, 50	103(a)	Goldberg, Olden, and D'Souza[5]

II. ANALYSIS

A. Legal Standards

A patent claim is unpatentable under 35 U.S.C. § 103 if the differences between the claimed subject matter and the prior art are such that

[2] Petitioner supports its challenge with the Declaration of David Crane (Ex. 1003) and Patent Owner provides the Declaration of Craig Wills, Ph.D. (Ex. 2031). *See infra*.
[3] Ex. 1004, U.S. Patent No. 5,823,879 (iss. Oct. 20, 1998).
[4] Ex. 1005, U.S. Patent No. 6,460,141 (iss. Oct. 1, 2002).
[5] Ex. 1011, U.S. Patent No. 6,745,224 B1 (iss. Jun. 1, 2004).

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. 35 U.S.C. § 103; *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). "[W]hen a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result." *KSR*, 550 U.S. at 416 (citing *United States v. Adams*, 383 U.S. 39, 50–51 (1966)). The question of obviousness is resolved based on 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 ordinary skill in the art; and (4) when in evidence, objective evidence of non-obviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

The Supreme Court 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. To support this conclusion, however, it is not enough to show merely that the prior art includes separate references covering each separate limitation in a challenged claim. *Unigene Labs., Inc. v. Apotex, Inc.*, 655 F.3d 1352, 1360 (Fed. Cir. 2011). Rather, obviousness additionally requires 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.*

Accordingly, an obviousness determination generally requires a finding "that a person of ordinary skill in the art would have been motivated

to combine or modify the teachings in the prior art and would have had a reasonable expectation of success in doing so." *Univ. of Strathclyde v. Clear-Vu Lighting LLC*, 17 F.4th 155, 160 (Fed. Cir. 2021) (citing *OSI Pharms.*, 939 F.3d at 1382 (quoting *Regents of Univ. of Cal. v. Broad Inst., Inc.*, 903 F.3d 1286, 1291 (Fed. Cir. 2018))). "Whether the prior art discloses a claim limitation, whether a skilled artisan would have been motivated to modify or combine teachings in the prior art, and whether she would have had a reasonable expectation of success in doing so are questions of fact." *Strathclyde*, 17 F.4th at 160. In determining whether there would have been a motivation to combine prior art references to arrive at the claimed invention, it is insufficient to simply conclude the combination would have been obvious without identifying any reason why a person of skill in the art would have made the combination. *Metalcraft of Mayville, Inc. v. The Toro Co.*, 848 F.3d 1358, 1366 (Fed. Cir. 2017). Moreover, in determining the differences between the prior art and the claims, the question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 164 (Fed. Cir. 1985) ("It is elementary that the claimed invention must be considered as a whole in deciding the question of obviousness."); *see also Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1537 (Fed. Cir. 1983) ("[T]he question under 35 U.S.C. § 103 is not whether the differences themselves would have been obvious. Consideration of differences, like each of the findings set forth in *Graham*, is but an aid in reaching the ultimate determination of whether the claimed invention *as a whole* would have been obvious.").

As a factfinder, we also must be aware "of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning." *KSR*, 550 U.S. at 421. Applying these general principles, we consider the evidence and arguments of the parties.

B. Level of Ordinary Skill in the Art

The level of skill in the art is "a prism or lens" through which we view the prior art and the claimed invention. *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001). "This reference point prevents . . . factfinders from using their own insight or, worse yet, hindsight, to gauge obviousness." *Id.* Moreover, "the inquiry into whether any 'differences' between the invention and the prior art would have rendered the invention obvious to a skilled artisan necessarily depends on such artisan's knowledge." *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1337 (Fed. Cir. 2020) (citing *Dow Jones & Co. v. Ablaise Ltd.*, 606 F.3d 1338, 1349, 1353 (Fed. Cir. 2010) (affirming the district court's grant of summary judgment of invalidity in part because the obviousness "analysis requires an assessment of the '. . . background knowledge possessed by a person having ordinary skill in the art'" (emphasis added))).

Factors pertinent to a determination of the level of ordinary skill in the art include: (1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of workers active in the field. *Env't Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696–697 (Fed. Cir. 1983) (citing *Orthopedic Equip. Co. v. All Orthopedic Appliances, Inc.*, 707 F.2d 1376, 1381–82 (Fed. Cir. 1983)). Not all such factors may be present in every case, and one or more of these or other factors may predominate in a particular case. *Id.*

Moreover, these factors are not exhaustive but are merely a guide to determining the level of ordinary skill in the art. *Daiichi Sankyo Co. Ltd, Inc. v. Apotex, Inc.*, 501 F.3d 1254, 1256 (Fed. Cir. 2007).

In determining a level of ordinary skill, we also may look to the prior art, which may reflect an appropriate skill level. *Okajima*, 261 F.3d at 1355.

Additionally, the Supreme Court informs us that "[a] person of ordinary skill is also a person of ordinary creativity, not an automaton." *KSR*, 550 U.S. at 421.

In our Institution Decision we determined, in accordance with Petitioner's proposal, that

> [[a] POSITA in the technology field of the '089 patent would have had a degree in computer engineering, computer science, or a similar discipline, along with 2 years of professional experience in the fields of networking and network-based systems or applications, such as client-server and web-based systems, in the context of gaming or an equivalent level of skill, knowledge, and experience. (*See* Ex. 1003, ¶¶ 42–45.) This POSITA would be aware of and generally knowledgeable about casino gaming systems, including the types of software running on casino gaming machines, the types of software casinos employ to allow customers to engage in remote gaming, and the types of authentication and network security systems employed by casinos at the time the '089 patent was filed. (*Id.*, ¶ 44.) This POSITA would have had the same basic level of skill and background knowledge regardless of whether the '089 patent is entitled to a December 2000 or April 2002 filing date. (*Id.*, ¶ 45.)

Inst. Dec. 19–20 (quoting Pet. 25–26).

Patent Owner asserts that this definition is too narrow and argues that the level of ordinary skill in the art should include just the first sentence in Petitioner's definition, that is,

> a degree in computer engineering, computer science, or a similar discipline, along with 2 years of professional experience in the

> fields of networking and network-based systems or applications, such as client-server and web-based systems, in the context of gaming or an equivalent level of skill, knowledge, and experience.

PO Resp. 18. Patent Owner argues that its definition is more appropriate because none of the claims are limited to casinos specifically, and becuase the '089 patent discloses playing games on "remote gaming devices including 'a cell phone, a personal digital assistant, and a wireless game player.'" *Id.* at 19 (citing Ex. 1001, 13:18–21). According to Patent Owner, "Zynga's list of additional qualification[s] is unduly narrowing given the '089 Patent's disclosure and the recitations of the Challenged Claims." *Id.*

Apart from providing the more detailed level of skill in its Petition, Petitioner does not expressly dispute Patent Owner's asserted level ordinary skill in the art. *See generally* Pet. Reply. And, despite the Background of the Invention in the '089 patent being replete with references to casinos and casino gaming, we appreciate that the '089 patent may intend to include gaming activities not associated with any particular casino. A review of the Background and Summary of the Invention in the '089 patent explains for example that a "desire within the gaming industry is to electronically download gaming software from one or more remote locations to a gaming machine." Ex. 1001, 4:1–3. The '089 patent further describes that such a gaming machine "may be a portable gaming device such as but not limited to a cell phone, a personal digital assistant, and a wireless game player." *Id.* at 13:18–21.

Given the information in the Background and Summary of the Invention as expressed in the '089 patent, and because there is no express dispute as to Patent Owner's suggested level of ordinary skill in the art, and where our Decision does not turn on one definition or the other, we

determine that Patent Owner's proposed level of ordinary skill in the art is correct and rely this definition in our analysis below.

C. Claim Construction

We construe claims using the principles set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–17 (Fed. Cir. 2005) (en banc), and related cases. 37 C.F.R. § 42.100(b) (2021). Under that precedent, the words of a claim are generally given their "ordinary and customary meaning," which is the meaning the term would have to a person of ordinary skill at the time of the invention, in the context of the entire patent including the specification. *Phillips*, 415 F.3d at 1312–13.

In our Institution Decision we adopted the constructions in the parallel district court proceeding, as proposed for this proceeding by Patent Owner. Inst. Dec. 21–22. These claim constructions are set forth in the table below.

Claim Term	**Zynga's Proposed Claim Construction**	**Construction in the Parallel District Court Proceeding**
"gaming software"	"instructions that are executed to run a game or component of a game, as distinct from stand-alone data"	"Plain and ordinary meaning. (Note: data alone is not gaming software)."
"software authorization agent"	"a device that authorizes (that is approves or rejects) specific transfers of gaming software based on applicable rules, and monitors (that is tracks) these transfers"	"a device that authorizes (that is approves or rejects) specific transfers of gaming software based on applicable rules, and monitors (that is tracks) these transfers"

"gaming machine"	"a special purpose machine like a slot machine or video poker machine, not a general-purpose computer"	"Plain and ordinary meaning."

Although Petitioner takes issue with Patent Owner's interpretation of "gaming software" in terms of the scope of the prior art, Petitioner does not object specifically to the above constructions in its Reply, nor does Petitioner contend that a different construction is necessary to show unpatentability in view of Goldberg and Olden, and Goldberg, Olden and D'Souza. *See generally* Pet. Reply. Accordingly, we maintain the constructions for these terms in this proceeding in accordance with the claim constructions in the district court proceeding.

D. Ground 1: Claims 28–29, 31–33, 47–48, 84–86, 90–92, and 99–100– Obviousness over Goldberg (Ex. 1004) and Olden (Ex. 1005)

On the complete record before us, Petitioner has shown by a preponderance of the evidence that claims 28–29, 31–33, 47–48, 84–86, 90–92, and 99–100 would have been obvious over Goldberg and Olden.

1. Goldberg (Ex. 1004)

Goldberg is titled "Network Gaming System" and issued on October 20, 1998. Ex. 1004, codes (54), (45). Goldberg "is related to a method and apparatus for automating the playing [of] games such as blackjack so that they can be played continuously and asynchronously by a potentially large plurality of players substantially." *Id.* at 1:10–14. Figure 3 of Goldberg is reproduced below.

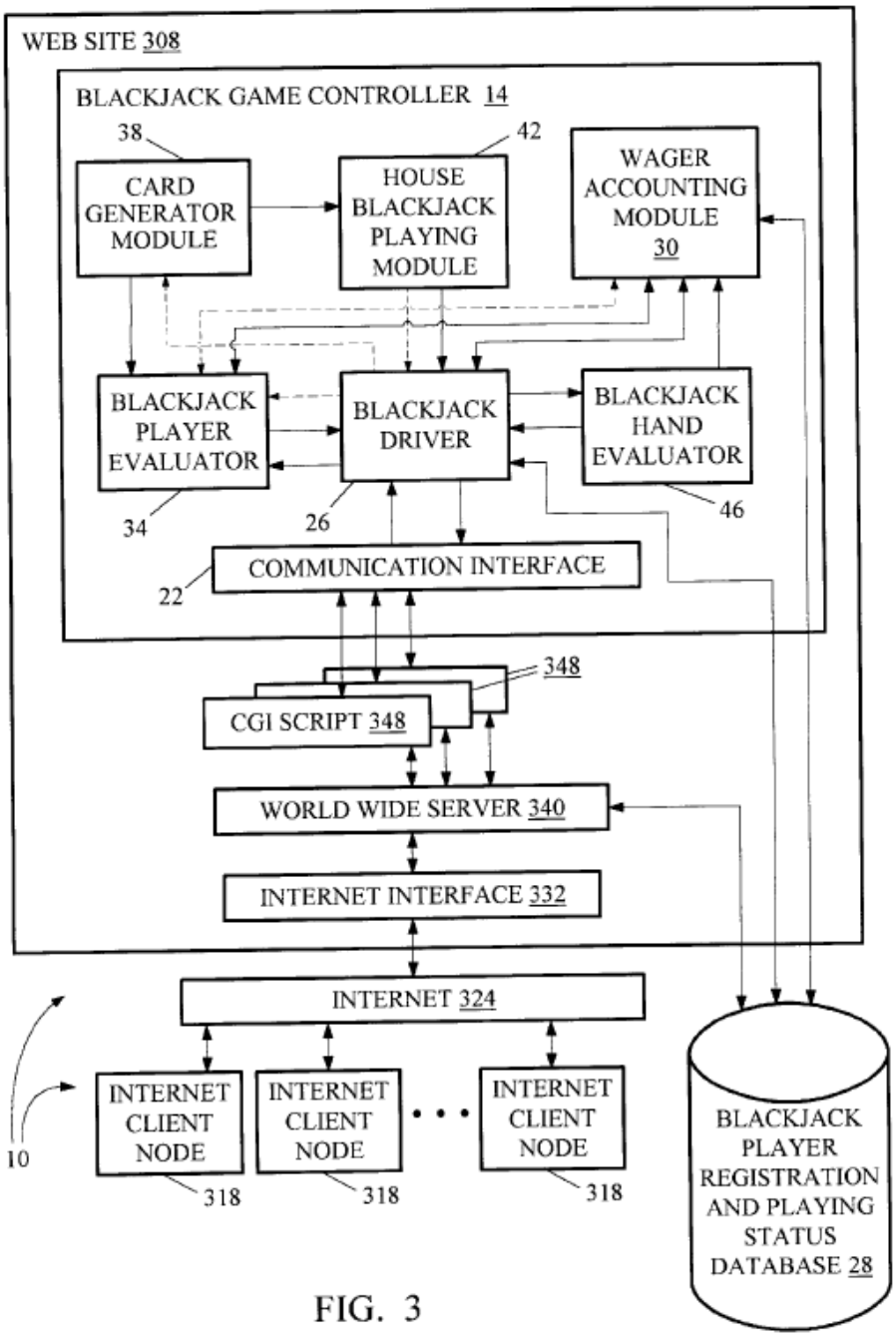


FIG. 3

Figure 3 illustrates a blackjack gaming system including blackjack gaming controller 14 accessible through Internet Web Site 308 by Internet client nodes 318 via Internet 324. *Id.* at 14:30–35.

Internet Web Site 308 comprises blackjack gaming controller 14, Internet interface 332, World Wide Web server 340, and CGI script(s) 348. *Id.* at 14:38–65, Fig. 3. Internet interface 332 receives and supplies communications between Internet 324 and the remainder of Internet Web Site 308. *Id.* at 14:37–40. Internet interface 332 communicates with World Wide Web server 340 "(a) for validating and/or initiating registration of web site users (e.g., blackjack players) at web site 308; and (b) for interpreting Internet requests for routing and/or activating web site 308 modules that can fulfill such requests." *Id.* at 14:40–45.

World Wide Web server 340 accesses database system 28 for determining the registration identity of a blackjack player. *Id.* at 14:45–48. Upon receiving user registration confirmation, World Wide Web server 340 activates instantiations of modules known as common gateway interface (CGI) scripts. *Id.* at 14:50–52. Each CGI script is "(a) for interpreting and processing Internet requests according to the semantics of a web site 308 application associated with the CGI script; and (b) for constructing Internet responses" from the associated application. *Id.* at 14:54–58.

Goldberg's Figure 2, reproduced below, "provides a representation of the gaming station 18 . . . used in gaming establishments for playing blackjack." *Id.* at 6:46–48.

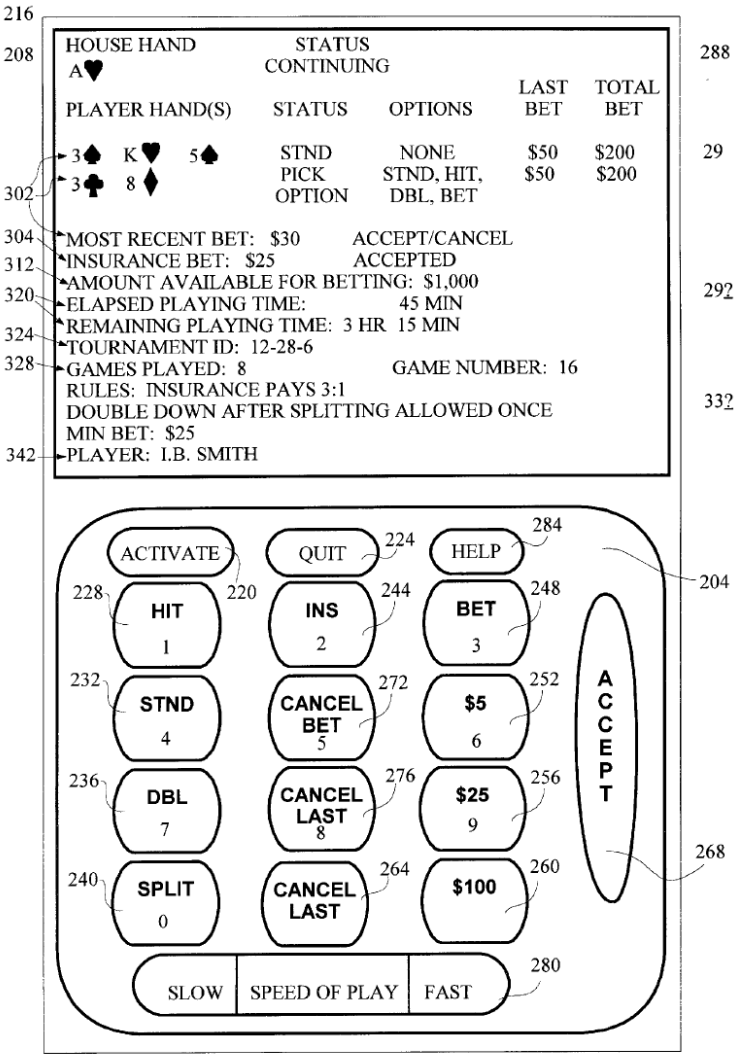


FIG. 2

Goldberg's Figure 2 illustrates gaming station 18 with player input area 204 including buttons 220–284, for example "[t]he 'HIT' button 228 allows the player to request another card to be dealt to him/her." *Id.* at 10:37–38. Goldberg also explains that "[t]he input keys of gaming station 18 of FIG. 1 may be also presented on the display screens of Internet client nodes 318 wherein the input buttons of gaming station 18 now become active buttons on a blackjack web page generated by the web site 308 and presented to a player at an Internet client node 318." *Id.* at 15:39–44.

2. Olden (Ex. 1005)

Olden is titled "Security and Access Management System for Web-Enabled and Non-Web-Enabled Applications and Content on a Computer Network" and issued on October 1, 2002. Ex. 1005, codes (54), (45). Olden "relates to computer networks and, more particularly, to a computer network in which execution of applications and use of content by users of the computer network is controlled." *Id.* at 1:7–10. Figure 1 of Olden is reproduced below.

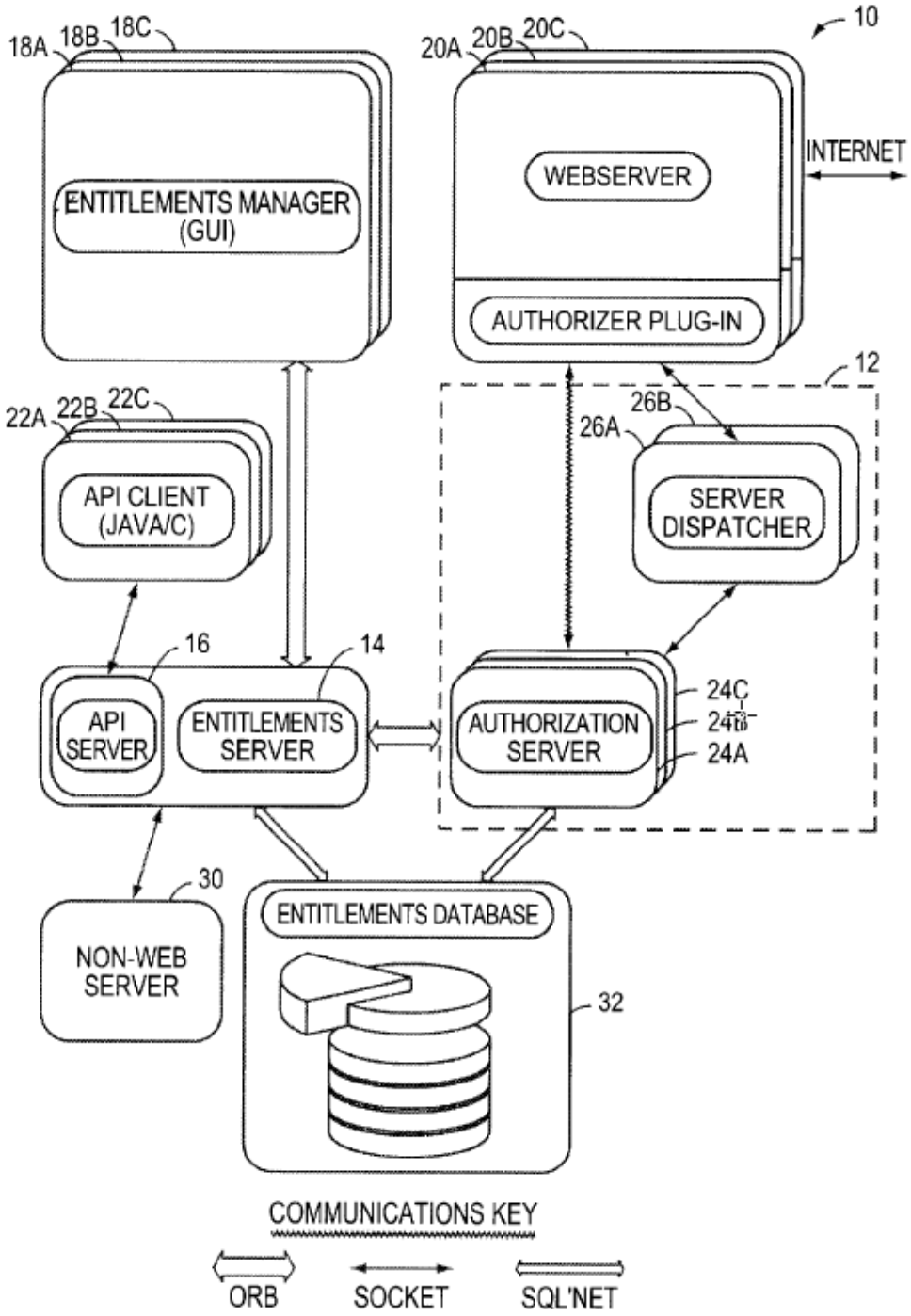


FIG. 1

Figure 1 illustrates security and access management system 10 comprising, among other things, authorization component 12 and Web server 20 connected to the remainder of the computer network over the Internet. *Id.*

at 3:45–50, Fig. 1. Authorization component 12 comprises authorization servers 24A, 24B, and 24C and authorization dispatchers 26A and 26B. *Id.* at 3:54–60, Fig. 1.

Authorization component 12 performs authorization processing on behalf of either Web server 20 or application programming interface (API) client 22. *Id.* 3:53–55. Web server 20 provides Web-enabled applications and content to network computer users. *Id.* 4:55–57.

Access management system 10 assigns user 68 access rights to application function 84. *Id.* 8:44–50. Application 88 has application function 84, which is used to determine access rights of user 68 to application 88. *Id.* at 8:51–55.

3. Independent Claim 28

(a) Petitioner's Arguments

Petitioner contends that a person of ordinary skill in the art would have understood Goldberg and Olden to teach all of the limitations of claim 1. *See* Pet. 26.

> *i. Limitation [28-p] – In a software authorization agent, a method of regulating a transfer of gaming software between two gaming devices, the method comprising:*

Petitioner argues that even if the preamble is limiting, Goldberg teaches transferring "gaming software," for example software enabling the playing of a blackjack casino-style game, between gaming machines. Pet. 27 (citing Ex. 1004, 1:11–12, 14:29–36; Fig. 3; Ex. 1003 ¶¶ 160–167). Petitioner contends that the "gaming software" transmitted by Goldberg includes "game-specific and customized HTML web pages generated using 'common gateway interface (CGI) scripts' that allow for game play on a user device." *Id.* (citing Ex. 1004, 14:48–65, 15:39–44; 16:39–53, 24:55–

64). Petitioner argues that HTML files are software that contain "a series of executable instructions—in the form of tags—that are used to generate a particular display on the user's device." *Id.* (citing Ex. 1003 ¶¶ 103–107, 168–177; Ex. 1014 at 1:24–33).[6] Thus, Petitioner argues, "[t]he HTML files transmitted by Goldberg are analogous to [] 'gaming software' identified in the '089 patent." *Id.* at 28 (citing Ex. 1001, 25:51–54; Ex. 1013, Abstract).

With respect to the "software authorization agent," Petitioner argues that Goldberg discloses "a separate 'blackjack player registration and playing status database 28' that is used to 'determin[e] the registration identity of, for example, a blackjack player' before the CGI scripts needed to facilitate blackjack play are activated and generate the game play HTML files for the user." *Id.* at 29 (citing Ex. 1004, 7:65–8:2, 14:45–48). According to Petitioner, Goldberg's "database [28] performs the same function as the claimed ***'software authorization agent'***: it monitors and authorizes access to gaming software." *Id.*

ii. Limitation [28-1] – receiving a gaming software download request message with gaming software

[6] HTML Acronym for Hypertext Markup Language. A markup language for identifying the portions of a document (called elements) so that, when accessed by a program called a Web browser, each portion appears with a distinctive format. HTML is the markup language behind the appearance of documents on the World Wide Web (WWW). HTML is standardized bymeans of a document type definition (DTD) composed in the Standard Generalized Markup Language (SGML). HTML includes capabilities that enable authors to insert hyperlinks that display another HTML document when clicked. The agency responsible for standardizing HTML is the World Wide Web Consortium (W3C). Ex. 2036, WEBSTERS NEW WORLD COMPUTER DICTIONARY, Tenth Ed., Bryan Pfaffenberger, Wiley Publishing, Inc. 2002.

transaction information from a first gaming device;

Petitioner argues that Goldberg teaches a first gaming device, namely web site 308, providing a gaming software download request message to the registration database 28, i.e., the authorization agent, to allow or deny a specified player access to the gaming software based on the player's registration status. Pet. 32–33 (citing Ex. 1004, 14:29–36, 25:24–40). Petitioner argues that where Goldberg is short on technical explanation as to the specifics of the "request message" and how it is handled by database 28, Olden teaches additional details about authorizing software download requests, namely that such requests would include "gaming software transaction information." *Id.* at 34. Petitioner contends that transaction information is included in the request because, for example, "Olden's system can employ 'an encrypted cookie' that includes a 'Web user's credentials.'" *Id.* (citing Ex. 1005, 23:55–61). Petitioner argues that a user's credentials are "the very same type of 'gaming software transaction request' and 'gaming software transaction information' the '089 patent requires." *Id.* at 35 (citing Ex. 1001, 8:53–64). For instance, Petitioner points out that the '089 patent describes that "transaction information" includes, *inter alia*, identification information, operator information, gaming software identification information, and gaming software title. *Id.* (citing Ex. 1001, 8:45–64).

iii. Limitation [28-2] – validating the gaming software download request using the gaming software transaction information;

According to Petitioner, Goldberg describes that "[b]efore a user is provided with HTML files needed for game play, 'database system 28' is 'access[ed]' for purposes of 'determining the registration identity of, for

example, a blackjack player.'" *Id.* at 37 (citing Ex. 1004, 14:45–48). Petitioner argues that Goldberg teaches that database 28 stores player information, such as "player[] financial status" and therefore "can employ the database to assess and verify a game request received from a user device." *Id.* (citing Ex. 1004, 14:45–48).

> *iv. Limitation [28-3] – sending an authorization message to the first gaming device wherein the authorization message includes information indicating whether the first gaming device is authorized to transfer the gaming software to a second gaming device and wherein the first gaming device and the second gaming device are from the software authorization agent;*

Petitioner argues that Goldberg describes that "upon receiving user registration confirmation from database 28 . . . the World Wide Web server 340 activates instantiations of" "CGI . . . scripts" 348. *Id.* at 40 (citing Ex. 1004, 14:48–52). Petitioner contends that "the data output by the CGI scripts for transmission back 'to an intended Internet client node 318 having an appropriate World Wide Web browser' may be in the form of 'a plurality of high level executable programs' (like customized HTML files)." *Id.* (citing Ex. 1004, 24:55–64). Petitioner explains that "[b]y its use of CGI scripts, Goldberg's system is able to tailor the response it provides to the user based on the user's original request. *Id.* at 41 (citing Ex. 1004, 15:61–64).

Petitioner argues that these limitations are shown in Goldberg's Figure 3, as annotated by Petitioner, below.

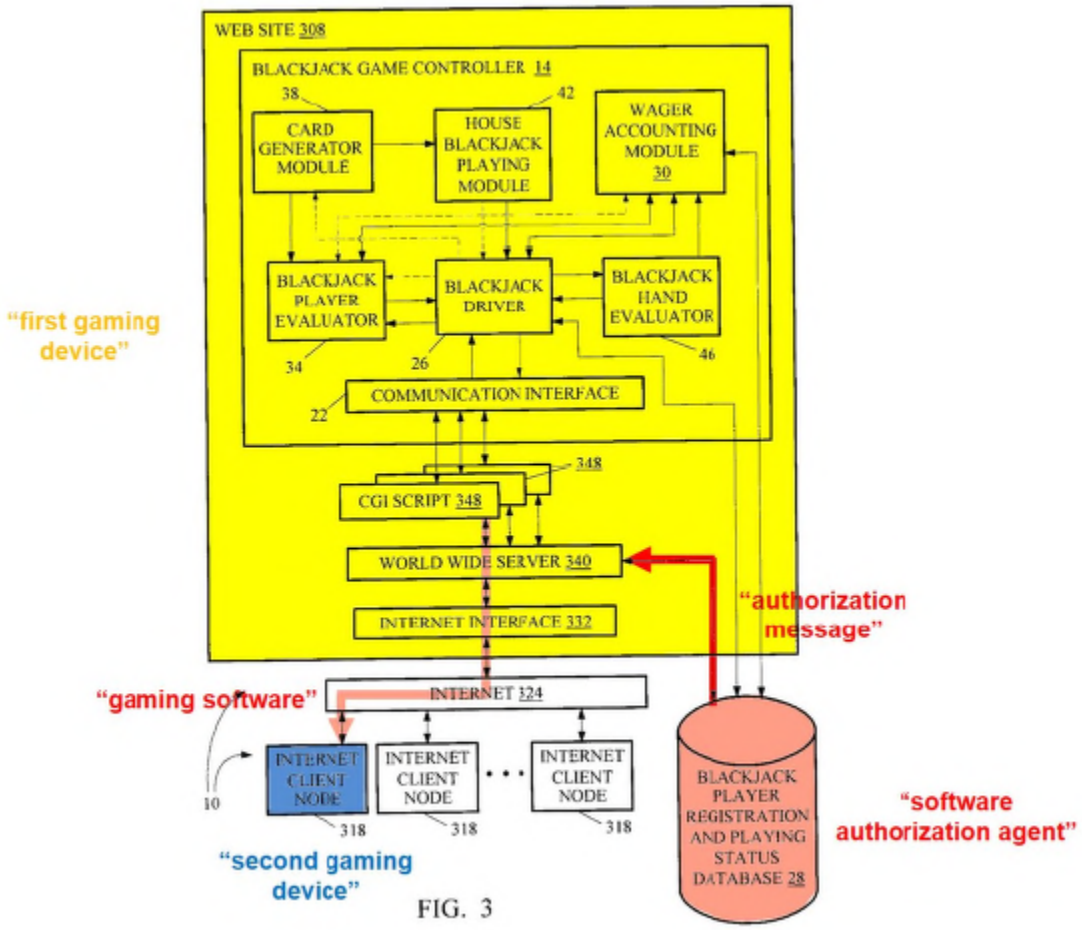


FIG. 3

Goldberg's Figure 3, above, as annotated by Petitioner, is a block diagram illustrating communication between client nodes 318, website 308, and registration status database 28. *Id.* at 43. As Petitioner explains it, Goldberg transmits "an 'authorization message' (the user request confirmation) from its 'software authorization agent' (database system 28) to its 'first gaming device' (web site 308) to 'authorize[]' the 'transfer of gaming software' (the custom HTML files or similar software) to a 'second gaming device' (Internet client node 318)." *Id.* (citing Ex. 1003 ¶¶ 192–193, 272).

v. Limitation [28-4] – wherein the gaming software is for at least one of a) a game of chance played on a gaming machine, b) a bonus game of chance played on a gaming machine, c) a device driver for a for a device installed on a gaming machine,

> *d) a player tracking service on a gaming machine and e) an operating system installed on a gaming machine.*

Petitioner asserts that "Goldberg's system allows users to play various ***'games of chance.'*** This includes 'blackjack, craps, roulette, poker, pai gow or the like.'" *Id.* at 46 (citing Ex. 1004, 3:66–4:1). Petitioner argues that Goldberg also discloses that the gaming machine can be either a general purpose computer, or a specific casino gaming station or machine. *Id.* (citing Ex. 1004, 4:43–50, 5:55–58, 24:60–64, Fig. 1). Petitioner argues that "the same 'information' and 'blackjack game configuration[s]' can be output by its gaming controller 14 to either type of device." *Id.* at 47 (citing Ex. 1004, 17:39–42, 18:16–20, 18:59–64; Ex. 1003 ¶¶ 289–300).

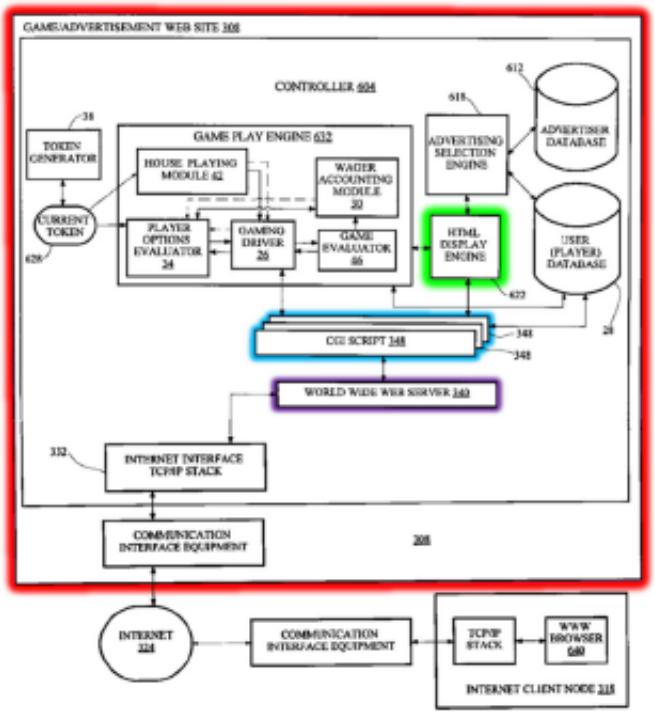
(b) Patent Owner's Arguments

Patent Owner makes at least five arguments based on the overarching assertion that Petitioner's arguments are grounded in improper hindsight analysis. First, Patent Owner argues that Petitioner and Mr. Crane mischaracterize the prior art disclosures and read the teachings in the '089 patent into the prior art. PO Reply 22–27. Second, Patent Owner argues that Petitioner's motivation to combine Goldberg and Olden is flawed because a person of ordinary skill in the art "would not conclude that Goldberg's database performs any authorization or validation operation, and, a POSITA would not look to Olden to determine how a ***database*** might perform a validation operation." *Id.* at 29 (citing Ex. 2031 ¶ 127). Third, Patent Owner argues that a person of ordinary skill in the art "would not regard the information sent from Goldberg's and Olden's servers to clients as a 'transfer of gaming software.'" *Id.* at 31. Fourth, Patent Owner argues that "the Petition fails to show that the cited prior art teaches the monitoring

functions of a software authorization agent." *Id.* at 47. And fifth, Patent Owner argues that "[t]he Petition fails to show that Goldberg and Olden, even when considered in combination, show the request and authorization messages, as claimed." *Id.* at 48. We address these arguments in turn.

(c) Whether Petitioner mischaracterizes Goldberg, and the plain and ordinary meaning of "gaming software"

Patent Owner initially argues that "Zynga mischaracterizes the HTML web pages that Goldberg's web site 308 sends to client nodes 318 as 'high-level executable programs.'" *Id.* at 22 (citing Pet. 21). Patent Owner contends that Goldberg only discloses CGI scripts 348, HTML display engine 622, and WWW server 340, all maintained within website 308. Patent Owner's annotated Figure 6 from Goldberg is reproduced below (*id.* at 23).



Goldberg (Ex. 1004), FIG. 6 (annotated)

Goldberg's Figure 6 as annotated by Patent Owner highlights CGI script 348 in blue, HTML display engine 622 in green, and WWW server 340 in purple, all shown within "Game/Advertisement web site 308" outlined in red. Patent Owner argues that Goldberg teaches the web pages transmitted to the client node 318 are just "data" and therefore not part and parcel, nor a software component, of the "gaming software" as claimed. *See* Section II.2.C. (In our claim construction we determined that "gaming software" should be given its "[p]lain and ordinary meaning. (Note: data alone is not gaming software)"). According to Patent Owner, "the Petition uses hindsight to draw parallels between the prior art and the Challenged Claims" by asserting that Goldberg transfers "gaming software." PO Resp. 24. Patent Owner contends that Goldberg simply teaches that

> [t]he World Wide Web server 340, in turn, transfers the data to the Internet TCP/IP stack 332 that interfaces with the Internet 324 ***for transferring the data to an intended Internet client node 318*** having an appropriate World Wide Web browser 640.

Id. at 23 (quoting Ex. 1004, 24:60–64) (emphasis in original).

Petitioner responds, arguing that Patent Owner's hindsight arguments, and most of the Patent Owner Response, are "premised on an improperly narrow reading of the '089 patent's claims." Pet. Reply 1. Petitioner argues that "'[g]aming software' is not limited to the entirety of a game, or just the game logic running on Goldberg's servers. Instead, it extends to any software component of a game, including the HTML files or other web-based software downloaded to user devices by Goldberg's system." *Id.* at 1–2.

Considering the parties arguments with respect to Goldberg, whether it is hindsight, motivation to combine, or any part of the dispute in this proceeding, an important initial consideration is—what the plain and

ordinary meaning of "gaming software" is, understanding that it cannot be simply the transfer of data. *See* Section II.C.2.

Initially, we look to the claims to understand what might be considered "gaming software." For instance, claim 28 recites:

> wherein the gaming software is for at least one of a) a game of chance played on a gaming machine, b) a bonus game of chance played on a gaming machine, c) a device driver for a for a device installed on a gaming machine, d) a player tracking service on a gaming machine and e) an operating system installed on a gaming machine.

Ex. 1001, 43:37–43. Here, claim 28 expressly recites, for example, that "gaming software" can be a "game of chance played on a gaming machine," or alternatively, "a device driver for a [] device installed on a gaming machine." *Id.* From the claim language itself we can determine that the downloaded "gaming software" could be, but need not be, the complete game software and logic for playing the game. The claims do not explain specifically what a "device driver" is, but a common definition is: "[a] software component that permits a computer system to communicate with a device. In most cases, the driver also manipulates the hardware in order to transmit the data to the device." MICROSOFT COMPUTER DICTIONARY, Fifth Ed., Microsoft Press, 2002. Similarly, the specification of the '089 patent describes

> [g]aming software related to other aspects of game play and operation of a gaming machine may also be authorized and downloaded using the methods and hardware of the present invention. For instance, device drivers used to operate a particular gaming device may be downloaded from a content provider or another gaming device.

Ex. 1001, 26:10–15. Multiple times, just like in claim 28, the specification of the '089 patent explains that

> the gaming software is for at least one of a) a game of chance played on a gaming machine, b) a bonus game of chance played on a gaming machine, c) a device driver for a for a device installed on a gaming machine and d) a player tracking service on a gaming machine.

Ex. 1001, 6:25–30; 9:61–67, 10:58–63.

Based on these non-exclusive examples, in the specification and claim language the plain and ordinary meaning of "gaming software" includes the transfer of software modules or components that facilitate communication and play of the game between a gaming machine and server.[7] The specification explains that

> [a] set of gaming software components may be executed on a gaming machine to play a gam[e] of chance. The game of chance may include gaming software components used to play a bonus game in conjunction with the game of chance. Thus, a complete set of gaming software components used to play a game of chance may be downloaded *or a portion of the gaming software components needed to play a game . . . of chance may be downloaded.*

Id. at 25:38–45 (emphasis added). Thus, the claims and specification are fairly explicit that "gaming software" includes not necessarily all game components but can even be certain "components needed to play a game . . . of chance." *Id.* To this end, the '089 specification expressly describes that "[i]n yet another example, a set of *gaming software components* may be downloaded to install a new graphical 'feel' for the game of chance." *Id.* at 25:51–53 (emphasis added).

Petitioner's declarant, Mr. Crane, after considering the disclosure in the '089 patent testifies that "'gaming software' as that term is used in

[7] We use the term "software components" and "software modules" interchangeably.

the '089 patent may be all or just part of the instructions executed to play a game of chance." Ex. 1003 ¶ 81. Mr. Crane points to additional disclosure in the '089 patent, incorporated by reference from U.S. Patent No. 7,931,533 to LeMay, (Ex. 1013), testifying that "LeMay further confirms that a POSITA would understand that 'gaming software' includes 'different game presentation software modules to change the look and feel of the game.'" *Id.* ¶ 85 (quoting Ex. 1013, Abstract). Based on this evidence, Mr. Crane explains persuasively that "[i]t was well known in the art as of the filing of the '089 patent that 'look and feel' are primarily elements of a game's user interface ('UI') or presentation." *Id.*

Given that the game's UI is provided on the gaming machine so the player can interact, i.e., play the game, as a software component that provides a "look and feel" to the game, it is reasonably understood from the '089 patent that a game UI is a software component, and consequently falls within the plain meaning of "gaming software." *See* Ex. 1001, 10:63–64 (The '089 patent describes that "[t]he gaming software may comprise one or more gaming software components.")

Because we determine, based on the '089 patent itself, that the plain and ordinary meaning of "gaming software" encompasses game presentation software components including UI software, for the additional reasons that follow we do not find that Petitioner has mischaracterized Goldberg, and find persuasive Petitioner's arguments and evidence that Goldberg teaches transferring of "gaming software," e.g., a UI, in the form of CGI scripts and HTML files transferred to client nodes 318.

Petitioner argues that "[t]he software transmitted by Goldberg includes, for instance, game-specific and customized HTML web pages generated using 'common gateway interface (CGI) scripts' that allow for

game play on a user device." Pet. 27 (citing Ex. 1004, 14:48–65, 15:39–44; 16:39–53, 24:55–64). In support of Petitioner's argument Mr. Crane testifies that "[e]ven plain vanilla HTML is arguably a programming language with code instructions encoded in the data stream as tokens . . . [w]ith the introduction of JavaScript in the mid-1990s, HTML was upgraded to a full programming language. Special '<script>' tags caused the execution of program code—often performing thousands of instructions—on the client computer." Ex. 1003 ¶¶ 105–106. Mr. Crane explains, persuasively, that a person of ordinary skill in the art "at the time of the '089 patent's filing would have known that an HTML data stream commonly contained all of the programming instructions needed to implement a real-time UI for Web-based content accessed by a user device, including, for example, a game playing on a Web Server." *Id.* ¶ 107.

Dr. Wills counters that "HTML is a markup language (see Ex. 2035, 2036 (discussed in ¶ 151), . . . not code, as Mr. Crane asserts." Ex. 2031 ¶ 67. Dr. Wills further asserts that "Goldberg does not disclose that a blackjack game ever 'runs' on the Internet client nodes 318." *Id.* ¶ 68. However, nowhere does Dr. Wills testify that an HTML file generated by a CGI script is not software. The closest Dr. Wills comes, is testifying that "[a] POSITA would not recognize Goldberg's Internet client nodes 318 receive 'gaming software' from the Goldberg system whether in the form of web pages or any other kind of software." *Id.* ¶ 142. But in the context of Dr. Wills' testimony, this explanation is mainly directed to Dr. Wills' and Patent Owner's assertion that "[a] POSITA that reads claims 28 and 84 expects that the games can be run on the second gaming device once the gaming software is transferred." *Id.* ¶ 143.

Based on the complete record now before us, we determine that the '089 patent expressly includes UI software that provides a "new graphical 'feel' for a game of chance" as a software component and is therefore encompassed with the plain and ordinary meaning of "gaming software." Ex. 1001, 25:52–53. To this end, considering all the evidence before us, including the disclosure in Goldberg relating to UIs derived from CGI scripts and HTML files transferred to client nodes 318, we further determine that Petitioner has not mischaracterized Goldberg's disclosure. Ex. 1004, 14:48–65.

(d) Whether a person of ordinary skill in the art would understand Goldberg to disclose transfer of "gaming software" to a gaming machine

The pertinent question is not, as Patent Owner poses it, whether Goldberg states explicitly that a web page is "programming," but whether a person of ordinary skill in the art would understand Goldberg's CGI scripts, as they promulgate HTML files and pages to client nodes 318, to include application specific UIs so as to be "gaming software" as claimed.

Petitioner argues that "Figure 2 of Goldberg depicts one such 'gaming station 18' that is specifically designed to 'provide[] a blackjack player with an electronic representation of a blackjack game.'" Pet. 46–47 (quoting 7:9–27; 9:49–10:10; Fig. 2). We reproduce Goldberg's Figure 2 below.

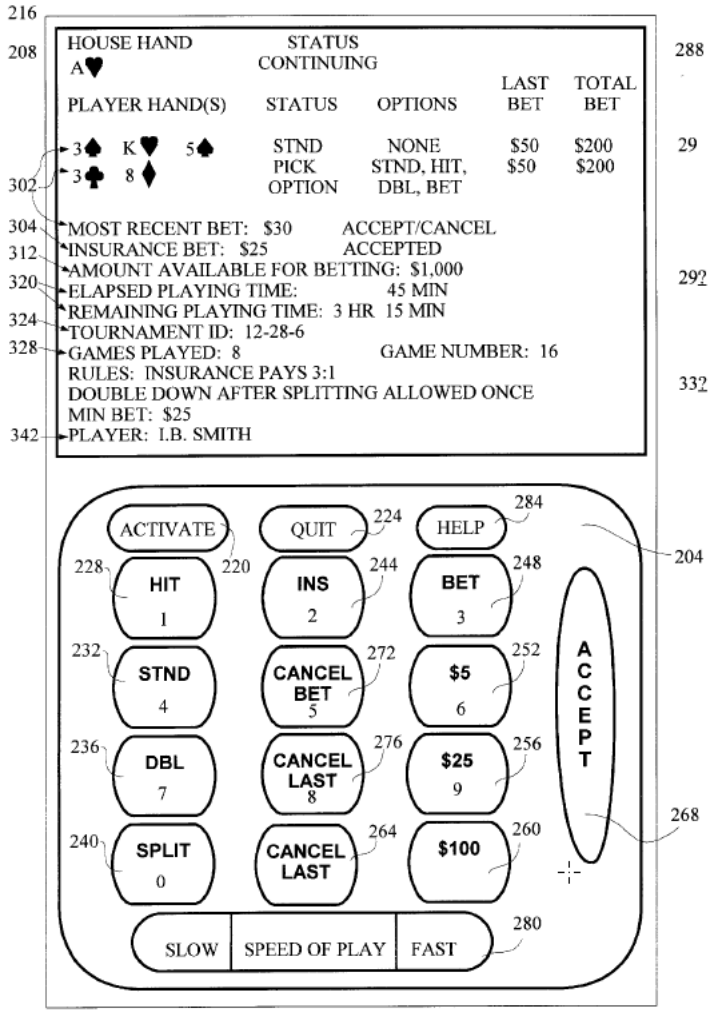


FIG. 2

Goldberg's Figure 2 is a representation of a blackjack game showing the dealer's House Hand and the Player Hands, as presented to a player at a gaming station. Goldberg describes that "each gaming station 18 also includes player interaction capabilities for requesting additional cards, activating various blackjack player options at appropriate times." Ex. 1004, 7:24–27. Goldberg also explains that "[t]he input keys of gaming station 18 of FIG. 1 may be also presented on the display screens of Internet client nodes 318 wherein the input buttons of gaming station 18 now become

active buttons on a blackjack web page generated by the web site 308 and presented to a player at an Internet client node 318." *Id.* at 15:39–44.

Clearly in Goldberg, a player at a gaming station, i.e., a gaming machine, (once verified) is provided with an electronic game display and UI that provides current game information and interactive functionality allowing the player to choose among certain game variables, send and receive information, and interact with the game controller on website 308. *See, e.g.*, *id.* at 12:34–37 (Goldberg describing for a blackjack game that "[t]he 'OPTIONS' column provides, for each blackjack hand being played, an indication of the permissible blackjack plays that the player currently may select from for the related blackjack hand in the same row").

We find persuasive Petitioner's arguments and evidence that Goldberg's HTML generated game display and UI discloses a gaming software component, and thus falls within the plain meaning of "gaming software" as we determined above, and is not just "data alone." Pet. 39–46. As discussed above, Dr. Wills' testimony does not directly contradict Petitioner's and Mr. Crane's position that Goldberg's UIs, even in the form of HTML, are a software module.

We acknowledge that Dr. Wills has testified consistently in this proceeding that HTML files are not "programmed."

> Q. Would it be accurate, in your view, to describe a web page as programmed?
>
> A. In -- in my view, a web page written using HTML is not a program.
>
> Q. All right. So it is not programmed in your view; is that right?
>
> A. It is not programmed. That is my view.

Ex. 1018, 55:17–23. However, when questioned about a conference paper, to which Dr. Wills is attributed as an author, Dr. Wills said the following:

> Q. [] There is a sentence that reads [as read]: "Pages in i-mode are programmed using compact HTML [parenthetical] (C-HTML)." Do you see that?
>
> A. I do.
>
> Q. So that sentence is using the word "programmed" in connection with pages written using compact HTML; correct?
>
> A. [Witness reviews document]. That is what that sentence says there. Yes.

Id. at 58:24–59:8. Addressing this discrepancy in the conference paper, Dr. Wills explained that he was not the primary author and "not necessarily looking, you know, carefully at every word that was in there." *Id.* at 62:23–25. Despite Dr. Wills' consistency in this proceeding, the paper does raise the possibility that a person of ordinary skill in the art would consider HTML to be programmed. We appreciate that there could be a difference of opinion as to whether or not HTML is programmed. But, this issue also appears to divert us somewhat from the actual claim language which recites "gaming software." Ex. 1001, 43:22, 32, 37.

More persuasive, and consistent with the express claim language, "gaming software," Mr. Crane explains that "HTML is often referred to as 'software' in the prior art." Ex. 1003 ¶ 177 (citing Ex. 1014, 1:24–33; Ex. 1015, 7:58–61; Ex. 1016 ¶ 59; Ex. 1017, 2:35–54). For example, U.S. Patent No. 6,216,121 B1, to Klassen, and assigned to IBM, explains that "it is an object of the present invention to provide a system for accessing a post office system which takes advantage of generally available software, such as HTML, web browsers, instead of relying on proprietary . . . system

software." Ex. 1017, 2:42–46. Similarly, U.S. Patent No. 6,636,966, to Lee et al., describes that "[h]ost 12 may be a personal electronic device with a connection to the internet, or it may be software, such as HTML, XML, or a small Java program known as an applet, running on a personal computer." Ex. 1015, 7:58–61. *See, e.g.*, *Ariosa Diagnostics v. Verinata Health, Inc.*, 805 F.3d 1359, 1365 (Fed. Cir. 2015) ("Art can legitimately serve to document the knowledge that skilled artisans would bring to bear in reading the prior art identified as producing obviousness."); *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (Board erred by "ignoring the additional record evidence [the appellant] cited to demonstrate the knowledge and perspective of one of ordinary skill in the art," as "the knowledge of such an artisan is part of the store of public knowledge that must be consulted when considering whether a claimed invention would have been obvious").

The testimony from Mr. Crane and the supporting evidence referencing HTML as "software," found repeatedly in the prior art, is persuasive in this case, and indicates strongly that a person of ordinary skill in the art would have understood HTML prescribed UIs as "software." Therefore, on the evidence in this case we credit Mr. Crane's testimony explaining that "a person of ordinary skill in the art at the time of the '089 patent's filing would have known that an HTML data stream commonly contained all of the programming instructions needed to implement a real-time UI for Web-based content accessed by a user device, including, for example, a game playing on a Web Server." *Id.* ¶ 107. And, overall, we are persuaded, that a person of ordinary skill in the art would have understood Goldberg to disclose transfer of "gaming software" to a gaming machine.

(e) Whether Goldberg only transfers data to a player's computer or client node

Because we have determined that Goldberg *does* transfer "gaming software" in the form of HTML files as UIs to a client computer, it stands to reason that Goldberg teaches more than simply transferring *only* data to client node 318. For purposes of completeness in our decision, we address the data issue as well.

According to Patent Owner, Petitioner further mischaracterizes Goldberg because, "Goldberg characterizes the web pages as ***data*** to be received by a generic web browser." PO Resp. 23 (quoting Ex. 1004, 24:60–64). Patent Owner points to this disclosure in Goldberg to make its point:

> The World Wide Web server 340, in turn transfers *the data* to the Internet TCP/IP stack 332 that interfaces with the Internet 324 for transferring *the data* to an intended Internet client node 318 having an appropriate World Wide Web browser 640.

Ex. 1004, 24:60–64. We acknowledge Patent Owner's point, that Goldberg discusses transfer of "data to an intended Internet client node 318." *Id.* On the other hand, Goldberg does not explain or discuss in any express manner, that this is "data alone," as the agreed upon claim construction reads. Section II.C. Leading up to this, Goldberg in fact states that "CGI scripts transfer data . . . which, as one skilled in the art will understand, may be a plurality of high level executable programs." *Id.* at 24:55–60. Reading this sentence in context, it is not clear whether it is either, or both, the CGI scripts and the transferred data that "may be a plurality of high level executable programs." *Id.*

Mr. Crane testifies persuasively that HTML pages are the "transfer[red] data" and that a person of ordinary skill in the art would have

understood that "[t]he CGI scripts generate customized data, including 'high level executable programs' like custom HTML files, that are relayed back to the 'Internet client node 318' to allow user game play." Ex. 1003 ¶ 127 (citing Ex. 1004, 24:55–64). Whether or not a person of ordinary skill in the art would consider HTML as "high level" programming, that is not entirely clear. But Mr. Crane elaborates, explaining that "[t]he customized HTML files constitute code or data that facilitate execution of a game on a user's device . . . HTML is a type of basic programming language that includes a series of declarative instructions—in the form of markup tags—that are followed and executed by another piece of software—like a user's web browser—to generate a display." *Id.* at ¶¶ 171–172.

In addition, Mr. Crane testifies that at the time of filing of the '089 patent, "it was known that in addition to HTML, '[a] Web page can also contain other Internet Resources such as 'applets,' 'plugins,' and scripting language' that 'add intelligence and interactivity to Web pages and support a greater range of functionality.'" *Id.* ¶ 179 (citing Ex. 1009, 4:13–16). Exhibit 1009 to which Mr. Crane refers, is U.S. Patent No. 6,133,991 ("the '991 patent"), to England. The '991 patent describes for example that

> [a]n applet is a small application program that typically is stored on the Web server. The applet is downloaded (i.e., transfers from the Web server to the user's PC system) with the HTML of the Web page when a Web page is required by the user. Once the applet is downloaded, it is activated and runs on the user's PC system. A common language for writing applets is the Java programming language, a language that allows Web masters (i.e., people who design Web pages) to create animated and interactive Web pages.

Ex. 1009, 4:16–25. Further, Mr. Crane points to several other prior art references describing HTML as software. *See* Ex. 1003 ¶ 177 (citing, *inter*

alia, Ex. 1015, 7:58–61 ("Host 12 may be a personal electronic device with a connection to the Internet, or it may be software, such as HTML, XML, or a small Java program known as an applet running on a personal computer.")). Mr. Crane summarizes, explaining persuasively that "[a] POSITA would consider HTML files to be 'software' because they are a series of instructions that are executed by a web browser running on the user's device to generate a particular display in connection with game play." *Id.* ¶ 188.

Considering Goldberg and the level of ordinary skill in the art, Mr. Crane explains persuasively that "CGI scripts generate customized data, including 'high level executable programs' like custom HTML files, that are relayed back to the 'Internet client node 318' to allow user game play." Ex. 1003 ¶ 127 (citing Ex. 1004, 24:55–64).[8] Mr. Crane's testimony regarding transfer of HTML files is consistent with Goldberg's embodiment describing a UI where "[t]he input keys of gaming station 18 of FIG. 1 may be also presented on the display screens of Internet client nodes 318 wherein the input buttons of gaming station 18 now become *active buttons* on a blackjack web page generated by the website 308 and presented to a player at an internet client node 318." Ex. 1004, 15:39–47 (emphasis added). We are persuaded that a person of ordinary skill in the art would have understood Goldberg's UI would have been transferred in the form of HTML pages and software, including a software component such as a program executing instructions for "active buttons on a web page" for playing a blackjack game as presented to the user on an internet client

[8] Whether or not HTML is a "high level" program may be debatable. However, that is irrelevant here because the claims do not require a "high level" program.

node 318. Considering all the evidence before us, we are persuaded that a person of ordinary skill in the art would have understood that "active buttons," for example, provide application specific software functionality on a player's computer, i.e., client node 318, facilitating a player's interaction with a game of blackjack, that is more than simply data, even where the game logic may run on remote website 308.

(f) Motivation to combine Goldberg and Olden

Turning to motivation to combine, Petitioner argues that Goldberg compares "user game requests with 'information identifying each player,' 'player[] financial status,' and 'information regarding the status or context of any game the player is presently playing' stored by database system 28." Pet. 59 (citing Ex. 1004, 8:2–14). Petitioner reasons that Goldberg does not describe its player verification, i.e., player authorization, system in detail, therefore, a person of ordinary skill in the art "would have had to look to other, known systems to ensure that Goldberg's system functions as intended. *Id.* (citing Ex. 1003 ¶¶ 404–408).

Referencing the dearth of specific details regarding how player authorization is accomplished in Goldberg, Mr. Crane testifies that "when implementing Goldberg, a POSITA would have had to look to other, known user validation and software authorization systems to supplement and complete what Goldberg itself already discloses to ensure that Goldberg's system functions as intended." Ex. 1003 ¶ 408. Mr. Crane testifies that "just like Goldberg, which allows user devices to request software f[ro]m a web site, Olden teaches a system that is designed to verify and authorize user device requests for the download of software from a web server." *Id.* ¶ 411 (citing Ex. 1005, 1:7–18, 2:15–17, 3:53–61, 4:55–57). Mr. Crane points to Goldberg's database 28 that contains player status and information

and testifies that similarly, "Olden employs a database with stored 'entitlement[] data that it uses to validate and authorize user device application function requests." *Id.* ¶ 413 (citing Ex. 1005, Fig. 1). Mr. Crane testifies further that "[b]ecause Olden's authorization system provides 'out-of-the-box support' for both Web and non-Web-applications, a POSITA would have recognized that it could be integrated with Goldberg's system with little additional effort or work." *Id.* ¶¶ 417–418 (citing Ex. 1005, 6:45–53).

Patent Owner makes two main arguments to support its assertion that Petitioner's combination is flawed. First, Patent Owner argues that "Goldberg provides a robust discussion of his database 28, which shows that it operates as an ordinary database, not as any 'software authorization agent.'" PO Resp. 28 (citing Ex. 2031 ¶ 126). Patent Owner argues specifically that "Goldberg describes the database 28 as performing ordinary database operations: It stores data that is written to it, and it supplies data that is read from it." *Id.* (citing Ex. 2031, 8:40–46). Second, Patent Owner argues that "Olden partitions applications into a variety of application functions, and defines entitlements to those application functions at user, group, or 'realm' granularities." *Id.* at 29. Patent Owner contends that a person of ordinary skill in the art "would find it counter-productive to apply the Olden techniques, with convoluted entitlements definitions assigned individually to application functions, to a system where players browse freely around a web site 308 and choose any number of games 726 to play." *Id.* at 30–31 (citing Ex. 2031 ¶¶ 129–134).

In its Reply, Petitioner responds that Patent Owner's arguments fail to acknowledge that a person of ordinary skill in the art would have recognized that "Olden's system is more resilient and has built in redundancy, allows

for more extensive and straightforward customization of authentication rules, permits extensive logging, and provides various other advantages." Pet. Reply 1. Petitioner contends that, *inter alia*, "Olden's authentication system provides built-in redundancy rendering it 'highly reliable' . . . . Olden's system is also improved because it is 'highly . . . configurable' allowing accessibility rules to be more readily and easily modified or adapted." *Id.* at 3 (citing Pet. 60–61). Petitioner argues further that "[t]he fact that Olden's system is more robust than Goldberg does not weigh against the combination." *Id.* at 4.

For the reasons below, we find Petitioner's combination to be supported by sufficient reasoning and evidentiary underpinnings such that a person of ordinary skill in the art would have been motivated to combine Goldberg and Olden, at least because Olden expressly describes that its user entitlement and authorization system is intended to be integrated with web-based and non-web based applications and content that require "a security architecture to enable network authentication and to provide secure access control." Ex. 1005, 1:35–36. Goldberg discloses just such a web-based application for games of chance, such as blackjack. *See*, *e.g.*, Ex. 1004, 4:47–50 (Goldberg describing "using an Internet embodiment as an exemplary embodiment of the present invention, a gaming web site may be provided wherein players may access the interactive gaming capabilities of the present invention").

Goldberg discloses a "blackjack player registration and playing status database 28." Ex. 1004, 7:66–67. Goldberg explains that, among other player specific details,

> the database system 28 maintains:

> (2.1) information identifying each player; e.g., a unique player identification code;
>
> (2.2) information regarding, for example, each blackjack player's financial status; in particular, a credit limit and a current amount of funds (either to be paid or received from the player);

Id. at 8:2–14. From the information maintained in database system 28, in one embodiment, the blackjack driver 26, via wager accounting module 30, "confirm[s] that the player is eligible to enter a new tournament." *Id.* at 16:26–27. Patent Owner contends that this disclosure in Goldberg does not constitute a "software authorization agent," because "Goldberg describes the database 28 as performing ordinary database operations: It stores data that is written to it, and it supplies data that is read from it." PO Resp. 28 (citing Ex. 1004, 8:40–46).

Independent claim 28 does not explain, structurally, or even functionally really, what "a software authorization agent" is–, only that it entails "a method of regulating a transfer of gaming software between two gaming devices." Ex. 1001, 43:21–22. Our claim construction determined that "a software authorization agent" is "a device that authorizes (that is approves or rejects) specific transfers of gaming software based on applicable rules, and monitors (that is tracks) these transfers." Section II.C. Nothing in claim 28 indicates that the claimed "software authorization agent" is limited simply to an ordinary database. Claim 28 does not even recite a "database" limitation or element. According to the '089 patent specification, referring to Figure 8, "[t]he gaming software authorization agent 50 may be a conventional data server including but not limited to a database 202, a router 206, a network interface 208, a CPU 204, a memory 205 and a firewall (not shown)." Ex. 1001, 24:32–36, Fig. 8. Also,

the '089 patent describes with respect to Figure 13 that "the authorization [agent] may check to determine if the requestor identified in the message is in a local [] database of gaming entities that are authorized to request transfers of gaming software." *Id.* at 38:28–31. In other words, database 202 in the '089 patent appears to be doing the same thing that Goldberg's "ordinary database" does, that is—storing data. *See id.* at 24:42–43 (The '089 patent explaining that "[d]atabase 202 may be used to store gaming software transaction records.").

Patent Owner's argument is muddying the waters here, mainly because the claim does not even require "a database." In any event, Goldberg provides a clear example that

> if the player request is related to a current blackjack and/or blackjack tournament, then step 476 is encountered wherein the blackjack driver 426 uses the player's identification (ID) provided with the request for retrieving any status information from the database system 28 regarding any current blackjack game and/or blackjack tournament in which the player may be currently involved.

Ex. 1004, 17:6–12. Goldberg, here, simply explains that based on a player ID the driver 426 retrieves information from database system 28. Then, "blackjack driver 26 requests confirmation from the wager accounting module 30," and if

> [t]he wager accounting module 30 determines whether the player has sufficient tournament credits to continue in the tournament. Following this, in step 488, the blackjack driver 26 determines whether a confirmation has been received from the wager accounting module 30. If no such confirmation is provided, then in step 492, the blackjack driver 26 outputs a message to the player at his/her Internet client node 318 (gaming station 18) indicating that no further blackjack games in the current tournament may be played by the player.

Id. at 17:16–28. Consistent with our claim construction, Goldberg's database 28, driver 26, and wager accounting module 30, in our opinion, teach "a device that authorizes (that is approves or [as in this example] rejects) specific transfers of gaming software based on applicable rules, and monitors (that is tracks) these transfers." Section II.C. Logically, in this example, without confirmation, no blackjack game configuration would be provided to the player. Additionally, Goldberg explains that if approved, "blackjack drive[r] 26 requests the blackjack player evaluator 34 to provide a[n] initial blackjack game configuration for the new blackjack game . . . wherein this configuration includes the initial card representation for the player's hand." *Id.* at 17:39–45. Goldberg, therefore, describes a fairly rudimentary confirmation process in the above example, one that checks status information stored in database system 28, e.g., for the requisite tournament credits, and outputs an appropriate confirmation or denial of further tournament play. And, if confirmed, Goldberg expressly discloses providing the user, i.e., transfers to the user's computer, the appropriate game configuration and card representations. *Id.*

Goldberg's example, above, discloses the "software authorization agent" limitation in claim 28. Petitioner relies on Olden, however, to supply additional details as to how a person of ordinary skill in the art would have implemented "a software authorization agent" because Goldberg's description is fairly general. Pet. 30. Considering Olden's Figure 1, reproduced below, an authorization component 12 is disclosed including authorization server 12 connected to entitlements database 32.

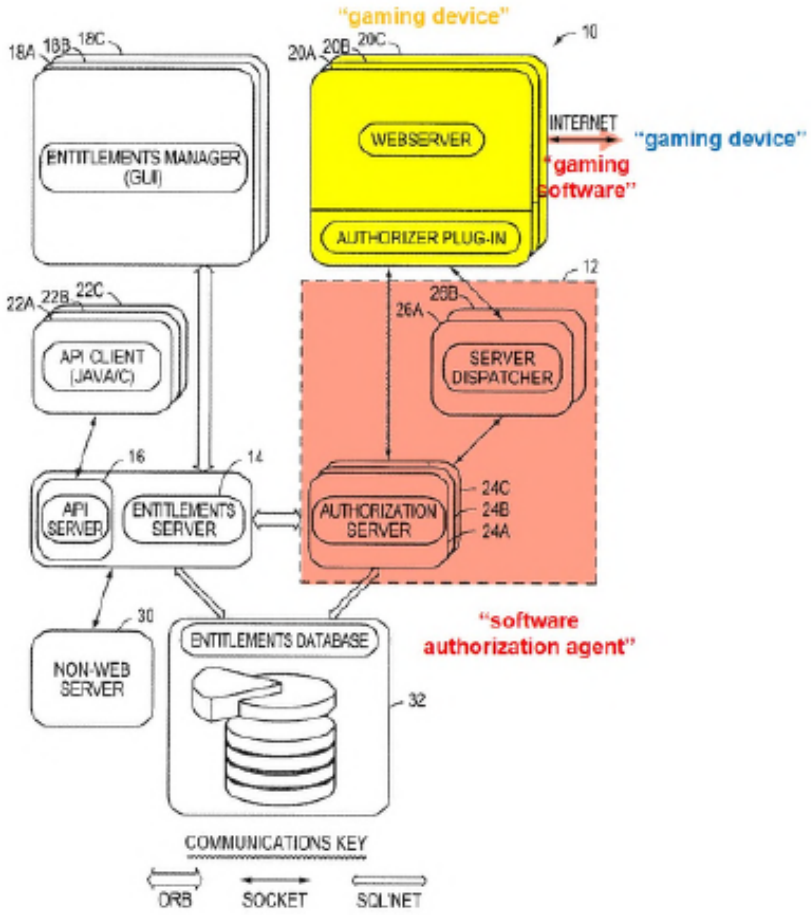


FIG. 1

Olden's Figure 1, as annotated by Petitioner, illustrates security and access management system 10 including authorization component 12 (red), entitlements (database) server component 14 communicating with entitlements database 32, API server 16, administrative client (graphical user interface) 18, and Web server 20 (yellow). Petitioner argues that "just like Goldberg, Olden's system is designed to verify and authorize user device requests for the download of software from a web server." Pet. 59–60 (citing Ex. 1005, 1:53–59, 2:15–17, 2:55–57, 3:53–55).

Besides the overlap in general function and purpose of the database driven user/player verification systems, Petitioner asserts that a person of ordinary skill in the art would have been motivated to use Olden's security

and access management system 10 because it expressly indicates that it was intended to integrate with applications such as Goldberg's gaming system and web site 308. Petitioner argues, for example, that "Olden's system provides 'out-of-the-box support' for both Web and non-Web-applications." *Id.* at 60. Mr. Crane testifies that "Olden explains that its system 'provides out-of-the-box support for Web-based applications' and is 'powerful and flexible enough to secure proprietary applications.'" Ex. 1003 ¶ 417 (citing Ex. 1005, 6:45–53). Mr. Crane points out that Olden describes its system as "highly . . . reliable" and "us[es] multiple redundant 'authorization servers,'" testifying that a person of ordinary skill in the art "would have recognized that Goldberg's system could similarly be rendered more reliable, and more immune to the effects of failure, by the use of multiple redundant authorization servers arranged and structured in the manner taught by Olden." *Id.* ¶ 420.

We acknowledge Patent Owner's counter-argument that Olden provides "convoluted entitlements definitions assigned individually to application functions, to a system where players browse freely around a web site 308 and choose any number of games 726 to play." PO Resp. 30–31 (citing Ex. 2031 ¶¶ 129–134). And, Dr. Wills testifies that a person of ordinary skill in the art "would not be motivated to apply an entitlements control scheme, with a high-level of granularity control, to Goldberg's system because Goldberg's system is designed to allow players to navigate freely throughout his web site 308." Ex. 2031 ¶ 134. Dr. Wills testifies further, that "[a] POSITA would recognize that a finely-tuned, highly granular control scheme is overkill in the Goldberg system. For this reason, a POSITA would not integrate Olden's teachings into the Goldberg system." *Id.* ¶ 134.

In this case, we credit Mr. Crane's testimony over that of Dr. Wills', because it relies on Olden's express teachings. Olden specifically describes *why* there is a need for more detailed access requirements, i.e., entitlements:

> [w]hile basic entitlements 80 are a relatively straightforward and effective approach to define access rights, this approach is hindered by the fact that access rights need to be assigned and maintained manually. Consequently, as users 68 are added or modified, an administrator needs to manually modify the basic entitlement 80.

Ex. 1005, 8:6–11. Olden then explains that "[a] more sophisticated approach is to define accessibility rules to a resource. As shown in FIG. 2, the access definition architecture 58 refers to these rules as smart rules 82." *Id.* at 8:12–14. Olden discloses further that "a smart rule 82 defines accessibility by specifying a criterion which a user property definition 72 for a user 68 must meet for the user to be granted access to an application function 84." *Id.* at 8:15–18. We do not find Olden's explanations and provided details regarding more sophisticated accessibility to application functions "convoluted" or particularly difficult to follow and understand. Olden clearly explains that "[a]ssociating rules and rights at the application function level, instead of at the application level, provides greater security granularity." *Id.* at 8:48–50.

Given such additional rules and rights granularity, Mr. Crane testifies persuasively that where Goldberg already stores user and device information, and considering Olden, "software access could be predicated not only on user identity, but on other factors like device type, user age, user location, date or time of day, software use time, and the like." Ex. 1003 ¶ 427. Mr. Crane also explains that a person of ordinary skill in the art would have understood that Goldberg's gaming system and more basic

authorization process is ripe for improvement where "[f]igures 1 and 3 of Goldberg show both a 'gaming station 18' and an 'Internet client node 318.' (*See, e.g.*, Ex. 1004, Figs. 1, 3.) And, showing that Olden expressly contemplates combination with other systems, Olden explains that its 'authorization component 12 performs authorization processing on behalf of either an enabled Web server 20 or an API [application programming interface] client 22.'" *Id.* ¶ 437 (citing Ex. 1005, 3:53–55).

For these reasons, we find that Petitioner and Mr. Crane have persuasively shown that Goldberg would function as intended, regardless of whether it uses more or less sophisticated entitlement and authorization rules as disclosed by Olden, and why a person of ordinary skill in the art would have been motivated to make such a combination. Furthermore, we note that although Patent Owner and Dr. Wills identified reasons why greater rule granularity might further restrict a player's ability to "browse freely around a web site 308 and choose any number of games 726 to play," this does not undermine Petitioner's analysis as to the combination of Goldberg and Olden. PO Resp. 29–30 (citing Ex. 2031 ¶¶ 129–134). This is because it is well-settled that a preferred combination or device is not required to provide a motivation for the current invention. *See, e.g.*, *Novartis Pharm. Corp. v. West-Ward Pharm. Int'l Ltd.*, 923 F.3d 1051, 1059 (Fed. Cir. 2019) ("[O]ur case law does not require that a particular combination must be the preferred, or the most desirable, combination described in the prior art in order to provide motivation for the current invention."); *PAR Pharm., Inc. v. TWI Pharms., Inc.*, 773 F.3d 1186, 1197–98 (Fed. Cir. 2014) (holding that it is not necessary to show that a combination is "the *best* option, only that it be a *suitable* option")

In summary, Petitioner has demonstrated by a preponderance of the evidence that a person of ordinary skill in the art would have been motivated to combine the teachings of Goldberg and Olden and would have been able to do so with a reasonable expectation of success.

(g) Is the information sent from Goldberg and Olden's servers "transfer of gaming software"?

Patent Owner's argument, here, rests on similar assertions regarding hindsight and the scope of the "gaming software" claim language as discussed above. Section II.D.3(d). Patent Owner reiterates its argument that "Goldberg teaches that all modules of the blackjack game controller 14 (***yellow***), the gaming software of Goldberg's system, are executed on a web site 308, rather than the Internet client nodes 318." PO Resp. 32. Asserting that the "gaming software" is all maintained within Goldberg's website 308, Patent Owner contends that Goldberg's Figure 5 illustrates how this "ensures that the player hands (***blue***) and the dealer hands (***green***) of the various games 610-626 draw cards from the same card sequence 604 (***tan***), which provides confidence the games are fair." *Id.* at 34. Goldberg's Figure 5 as annotated by Patent Owner is reproduced below.

Goldberg (Ex. 1004), FIG. 5 (annotated)

Goldberg's annotated Figure 5 illustrates how game play for blackjack occurs where "the row of numbers 604 across the top of the figure represents a sequence of values of successive card representations output by the card generator module 38." Ex. 1004, 19:55–57. We appreciate, as Patent Owner contends, that running the game logic on website 308 may increase confidence in the game. PO Resp. 32 (citing Ex. 1004, 20:56–64). Given this, Goldberg explains, for example, that "there may be a greater degree of confidence by the blackjack players that the house is not manipulating card representations in that blackjack players may substantially determine the timing for substantially all hits in a blackjack game . . . and thereby reduce any suspicions that the card representations are being manipulated." Ex. 1004, 20:58–64.

We acknowledge that Goldberg teaches running the blackjack game logic via Blackjack Game Controller 14 on website 308. Ex. 1004, Fig. 3.

But again, the claims do not require that the game is "run" on the user's computer. The claims require that "the first gaming device is authorized to transfer *the gaming software* to the second gaming device." Ex. 1001, 41:19–21 (emphasis added). And, as discussed above, "gaming software" as recited in the claims and described in the '089 patent specification, is not limited to the game logic, it can include software components that facilitate game play transferred to the user's computer as well. Ex. 1001, 6:25–30, 9:61–67, 10:58–63. As we explained, Petitioner and Mr. Crane have persuaded us that a person of ordinary skill in the art would have understood that Goldberg's HTML pages, as output by CGI scripts, provide a user interface for playing a blackjack game which would have been understood by those of ordinary skill in the art to be "gaming software," as opposed to simply data. Although Dr. Wills would not agree that HTML pages are programmed, Dr. Wills did not deny that Goldberg transmits HTML file and UI game configurations to the player's client device:

> Q. And those output HTML pages are meant for and eventually sent to the client devices; correct?
>
> A. Yes. That is my understanding that in Goldberg those are sent to the -- those HTML pages are sent to the client device.
>
> Q. And those HTML pages include new game configurations or new game representations; correct?
>
> A. They contain whatever is generated by the CGI scripts.
>
> Q. And what is generated is a representation or configuration of the game; correct?
>
> A. A configuration of the current -- current -- the current game, yes.

Ex. 1018, 24:16–25:3. As discussed previously, we are persuaded that a person of ordinary skill in the art would have understood Goldberg's UI

would have been transferred in the form of HTML pages, including software components such as a program executing instructions to display a current representation of a blackjack game, and for example, "active buttons on a web page" for playing a blackjack game as presented to the user on an internet client node 318. Ex. 1004, 15:42–43. Considering all the evidence before us, and despite the fact that Goldberg's gaming logic is run on website 308, we are persuaded that Petitioner has shown preponderant evidence that Goldberg's UIs in the form of HTML would have been understood by those of ordinary skill in the art as "gaming software," as the challenged claims require.

(h) Whether the prior art teaches the monitoring functions of a "software authorization agent"

Our claim construction determined that a "software authorization agent" is "a device that authorizes (that is approves or rejects) specific transfers of gaming software based on applicable rules, and monitors (that is tracks) these transfers." Section II.C. Patent Owner concedes that "Goldberg uses database 28 to track information about players," but argues that "Goldberg's CGI scripts 348, however, generate web pages dynamically based on response from modules within the blackjack game controller 14 . . . Goldberg has no disclosure that the player database 28 stores data regarding these web pages." PO Resp. 47–48 (citing Ex. 1004, 8:9–27, 14:63–65). With respect to Olden, Patent Owner contends that "Olden's entitlements are defined for different application functions. But Olden controls (and by extension logs) access to application functions, not the content that these application functions generate." *Id.* at 48.

Petitioner responds, arguing that in addition to Goldberg's database monitoring the status of a game, "Olden unambiguously teaches an

authorization system with robust logging and monitoring capabilities." Pet. Reply 2–3. Petitioner argues specifically that Olden "not only engages in 'authorization processing,' but is also 'configured to perform various types of logging[]' . . . [t]his includes 'user activity logs' and 'information about the actions taken by' the server." *Id.* (citing Pet. 30–31). Petitioner contends that Olden teaches "[t]he log files are maintained by the 'authorization server' and 'preferably record[] information about the actions taken by' the server." Pet. 31 (citing Ex. 1005, 29:44–50, 25:58–26:8).

Pointing to the express teaching in Olden, Mr. Crane testifies that "[t]he 'log[ged]' information can include, for instance, whether a '[u]ser [is] allowed' access to software functions 'based on smart rule[s]' applied by the authorization component." Ex. 1003 (citing Ex. 1005, 25:58–26:9). We find Mr. Crane's testimony persuasive. Olden teaches that "the user activity log file described earlier, CT_UserActivity_<port>.log, preferably records information about the actions taken by the authorization servers 24A, 24B, 24C in response to user requests." Ex. 1005, 29:44–47. Olden further explains that user activity logging includes the "[a]pplication requested." In this way, where a user requests access to a certain application, and for example, the request is allowed, Olden logs the allowance, as well as the application that is requested. *See id.* at 26:9–29 ("The logging levels, and the actions that are written to the log file at that level (by number on the list above), are listed below . . . User Validation . . . Application requested").

Olden's authorization logging system fits squarely into the meaning of "software authorization agent," that is, "a device that authorizes (that is approves or rejects) specific transfers of gaming software based on applicable rules, and monitors (that is tracks) these transfers." Section II.C. Patent Owner acknowledges the logging of the requested application, but

asserts that Olden does "not [log] the content that these application functions generate." *Id.* at 48. Patent Owner proposed the specific constructions promulgated by the district court that we rely on in this proceeding. *See* Section II.C. Yet, we disagree with Patent Owner's supplementary interpretation of "software authorization agent." Logging *the content* of an application, as Patent Owner asserts, is not part of the claim construction. The claim construction requires ". . . monitor[ing] (that is track[ing]) these transfers." Nowhere does the claim construction specify any specific informational content or data type to be stored by the database or logging system. As Patent Owner acknowledges, Olden clearly tracks, i.e., logs, the "[a]pplication requested," which meets the proper claim construction determined in this proceeding. PO Resp. 47.

(i) Whether Goldberg and Olden disclose the request and authorization messages

Claim 28, for example, requires "receiving a gaming software download request message," and if validated, "sending an authorization message to the first gaming device." Ex. 1001, 43:24–31. Patent Owner argues that "[t]he Petition fails to show that Goldberg and Olden, even when considered in combination, show the request and authorization messages, as claimed." PO Resp. 48. Patent Owner argues that "Goldberg describes the player registration and playing status database 28 simply as a database that 'maintains in persistent storage information regarding each blackjack player.'" *Id.* at 50 (citing Ex. 1004, 7:67–8:2). According to Patent Owner "Goldberg never states that the database 28 sends any 'authorization message,' as recited in claims 28 and 84." *Id.* at 51. Patent Owner's point is that in Goldberg "the WWW server 340, determines whether players are authorized to access games." *Id.* at 52.

As we discussed above, neither claim 28 or 84 recite or require merely a "database" to send an "authorization message." Section II.D.3(h). Under the proper claim construction, a "software authorization agent" is "a device that authorizes (that is approves or rejects) specific transfers of gaming software based on applicable rules, and monitors (that is tracks) these transfers." Section II.C. Neither the claim, nor the proper claim construction requires that the "device," is simply a database. The '089 patent describes that

> [t]he gaming software authorization agent 50 may be a conventional data server including but not limited to a database 202, a router 206, a network interface 208, a CPU 204, a memory 205 and a firewall (not shown). The CPU 204 executes software to provide the functions of the authorization agent 50 as will be described below in more detail.

Ex. 1001, 24:32–38. The written description in the '089 patent expressly contemplates other structures besides a database, as being the "software authorization agent," and Patent Owner has not pointed us to any persuasive evidence that such structure or "device" is limited to solely a database. Nor has Patent Owner provided any technical explanation or expert testimony explaining how a database alone would carry out such authorization functions without other structures, including a CPU, a memory and a network interface, for example. Indeed, like Goldberg, the '089 patent itself states "that gaming software authorization agent 50 may be a conventional data server." Ex. 1001, 24:32–33.

Patent Owner's assertion that claims 28 and 84 *recite* that "the database 28 sends an[] 'authorization message,'" is without merit and unsupported by persuasive evidence in the record. PO Resp. 51.

To the extent Goldberg may not disclose a request and authorization message, we agree with Petitioner and Mr. Crane, whose testimony is unrebutted on this point, that Olden expressly teaches a request and authorization message. Pet. 32–36; Ex. 1003 ¶¶ 221–231. Mr. Crane testifies persuasively that "Olden explains that the 'authorization server 24 receives an authorization request from . . . an enabled Web server 20' . . . [t]hus, 'Web server plug-ins' 'query[] the primary authorization server[s] 24A, 24B, or 24C for authorization requests.'" Ex. 1003 ¶ 217 (citing Ex. 1005 23:46–49, 5:24–47). Mr. Crane's testimony is unequivocally supported by Olden's written description stating that

> [i]n operation, when an authorization server 24 receives *an authorization request* from either an enabled Web server 20 or from an API client 22, the authorization server performs various steps for authorization, as shown in FIG. 28.

Ex. 1005, 23:46–49 (emphasis added). And, considering Olden's Figure 1, as annotated by Petitioner and reproduced below, Mr. Crane explains further that

> Olden's authorization component 12 with authorization server 24 (a "software authorization agent") *transmits an ALLOW smart rule result (an "authorization message") back to Web server 20* (a "first gaming device"). Upon receipt of this result, the web server can transmit back to the user's device (a "second gaming device") the user device requested application or application function ("gaming software").

Ex. 1003 ¶ 287 (emphasis added).

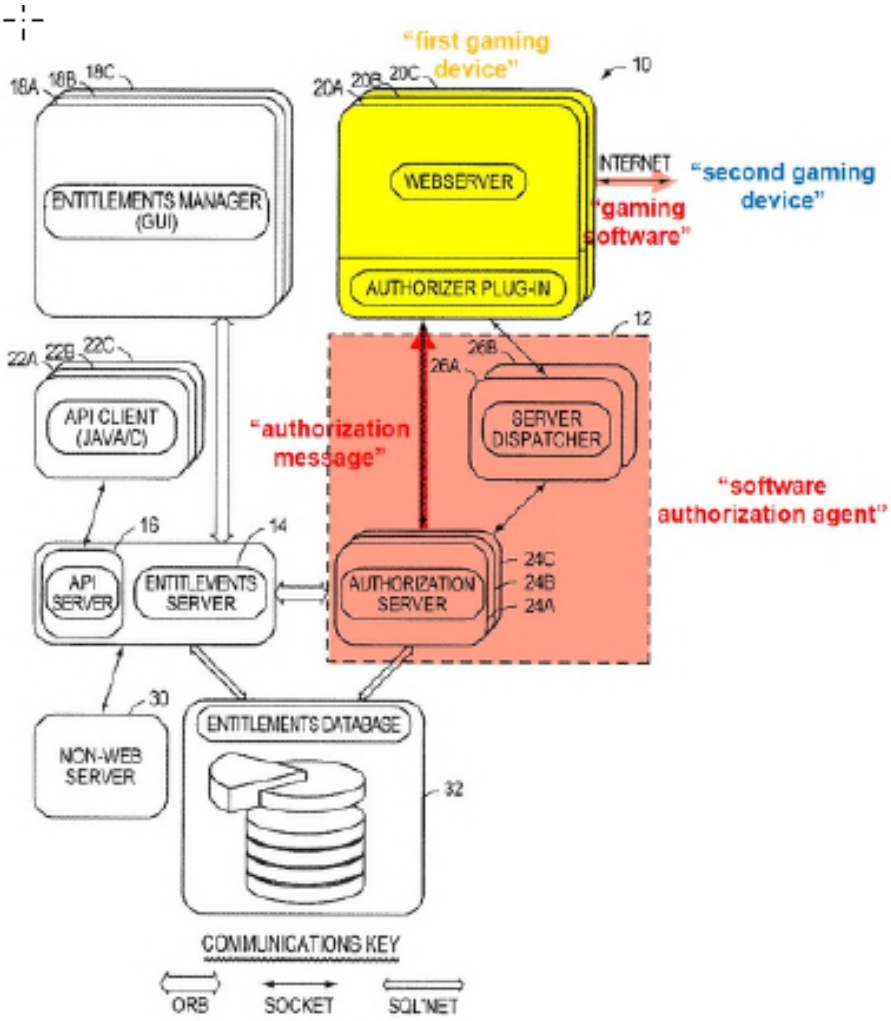


FIG. 1

Olden's Figure 1, as annotated by Petitioner, illustrates security and access management system 10 including authorization component 12 (red), entitlements (database) server component 14 communicating with entitlements database 32, API server 16, administrative client (graphical user interface) 18, and Web server 20 (yellow). Mr. Crane's testimony with respect to an "authorization request," and "authorization message" is supported by express evidence in Olden, and is essentially unrebutted on the record in this proceeding. *See* PO Resp. 48–52 (mainly asserting that "[a] POSITA would not recognize any request in the Goldberg system as a

'gaming software download request message, as recited in claim 28"). Accordingly, we are persuaded that at least Olden, as combined with Goldberg, teaches "receiving a gaming software download request message," and if validated, "sending an authorization message to the first gaming device" as called for in claim 28. Ex. 1001, 43:24–31.

(j) Conclusion as to Patent Owner's hindsight arguments

Weighing the evidence, as we have above, Petitioner has not drawn particularly on the teachings of '089 patent, nor used the patent as a template for its own reconstruction. Petitioner has, in our opinion, set forth challenges based on the state of the art, specifically Goldberg and Olden, and the level of ordinary skill in the art that understood the function and structure of CGI instantiations and how HTML web pages included application specific software functionality in a UI, to a player, which all existed and were known at the time of the filing of the application that became the '089 patent. *See In re McLaughlin*, 443 F.2d 1392, 1313–1314 (C.C.P.A. 1971) ("Any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, but so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure, such a reconstruction is proper."). We do not find Petitioner's arguments nor Mr. Crane's testimony to be based on improper hindsight.

(k) Conclusion as to independent claim 28

Based on the complete record before us and for the reasons expressed above, we are persuaded that Petitioner has shown a preponderance of evidence that claim 28 would have been obvious over Goldberg and Olden.

4. Dependent claims 29, 31–33, and 47–48

Petitioner argues that dependent claims 29, 31–33, and 47–48 would have been unpatentable over Goldberg and Olden. Pet. 47–51. Petitioner relies upon Goldberg alone, and as combined with Olden to teach the additional limitations of claims 29, 31–33, and 47–48. *Id.*

For example, claim 29 recites the limitation that, "the second gaming device is at least one of a game server and a gaming machine." Ex. 1001, 43:44–46. Petitioner argues that "Goldberg allows users to obtain games from a remote 'gaming controller 14' using either an 'Internet client node 318 having an appropriate World Wide Web browser' or a dedicated 'gaming station 18.' Pet. 47 (citing Ex. 1003 ¶¶ 301–304). Considering Goldberg's Figure 3, reproduced below, we can identify internet client node(s) 318 as a "gaming machine" consistent with the claimed "second gaming device." *See*, *e.g.*, Ex. 1001, 1:34–37 (The '089 patent explaining that "a game played on a gaming machine usually requires a player to input money or indicia of credit into the gaming machine, indicate a wager amount, and initiate a game play.").

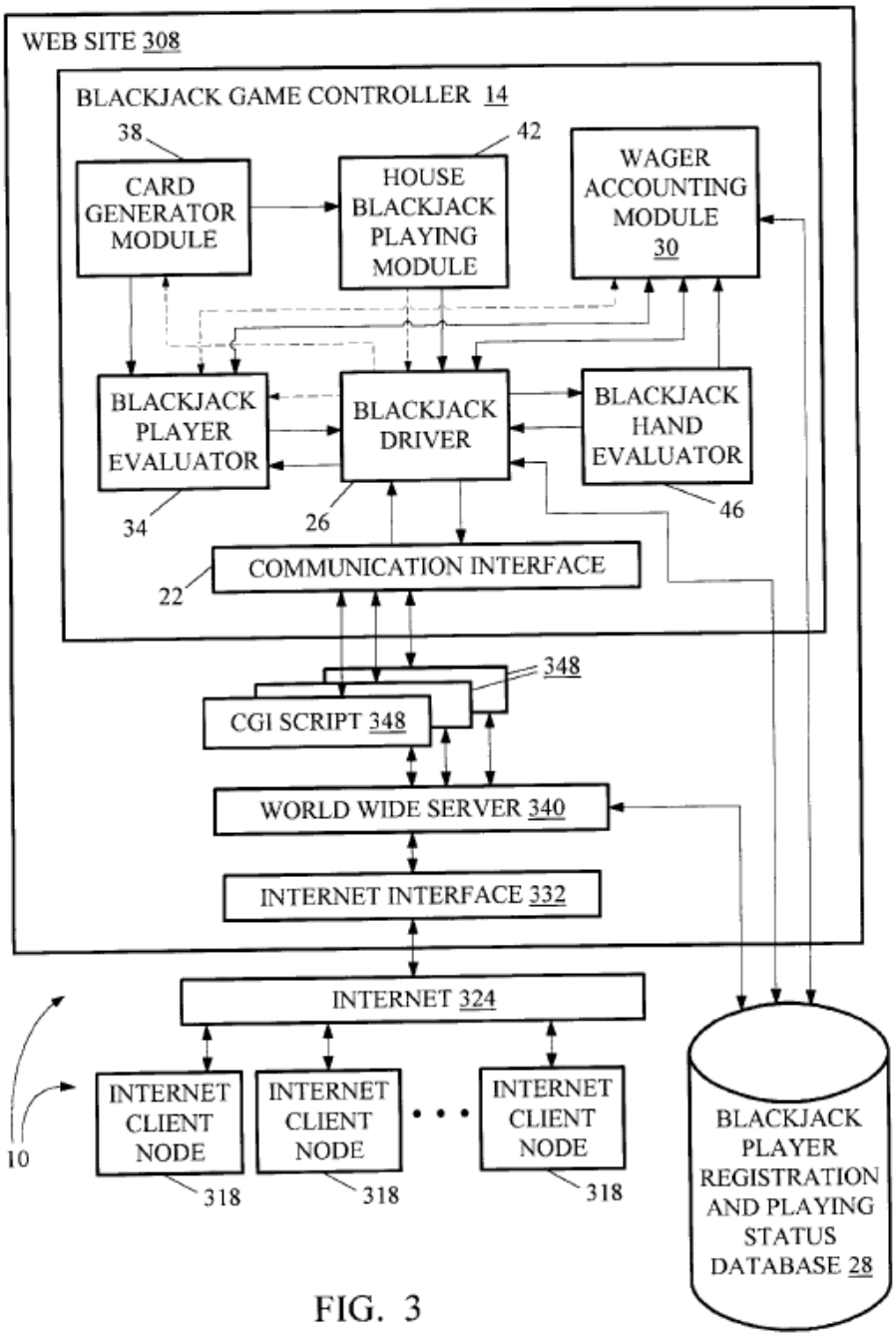


FIG. 3

Goldberg's Figure 3 illustrates a blackjack gaming system including blackjack gaming controller 14 accessible through Internet Web Site 308 by Internet client nodes 318 via Internet 324. *Id.* at 14:30–35. Just like the gaming machine described in the '089 patent, Goldberg explains "that

blackjack players at Internet client nodes 318 can play blackjack on the blackjack game controller 14 via the Internet 324 (or more particularly, via the World Wide Web)." Ex. 1003, 14:35–36.

Patent Owner does not substantively dispute that Goldberg and Olden teach these additional limitations of claims 29, 31–33, and 47–48. *See generally* PO Resp.

As for each of dependent claims 29, 31–3,3 and 47–48, we have considered, and on the complete record before us, accept as our own, Petitioner's arguments and evidence set forth at pages 47–51 of the Petition. Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that dependent claims 29, 31–33, and 47–48 would have been obvious over Goldberg and Olden.

5. Independent Claim 84

Independent method claim 84 is substantially similar to independent claim 28, but there are some differences, for example, instead of "a gaming software *download request* message," claim 84 recites "a gaming software *transaction request*." *Compare* Ex. 1001, 43:24–25, *with id.* at 47:56. Also, instead of claiming a method of regulating software transfer "in a software authorization agent" as in claim 28, claim 84 recites "a gaming software authorization agent that approves or rejects the transfer of gaming software." *Compare id.* at 43:21–22, *with id.* at 47:58–60.

Petitioner relies mainly on the same and similar arguments for independent claim 84 as it did for claim 28. Pet. 51–54. For example, Petitioner argues that "Goldberg also permits users to make '***a gaming software transaction request.***' To request a game, a device user 'navigate[s]' to the proper portion of Goldberg's 'game/advertisement web site 308' and selects a game for play." *Id.* at 52 (citing Ex. 1004, 25:24–50;

Ex. 1003 ¶¶ 344–350). Petitioner also points out that Olden similarly teaches a "process starts when a 'resource consumer[,]' like a Web browser user, 'requests access to a Web-enabled or non-Web-enabled application or content' from Web server 20." *Id.* (citing Ex. 1005, 7:11–15, 9:27–30, Fig. 30). And, Petitioner asserts, "[i]n addition to requesting access to a particular resource, the user can also supply Olden's system with 'credentials' via 'an encrypted cookie.'" *Id.* (citing Ex. 1005, 23:55–61; Ex. 1003 ¶¶ 351–355).

For the remainder of the limitations in claim 84, Petitioner refers the reader mainly to its arguments for the corresponding limitations with respect to claim 28. For instance, claim 84 recites the step of "sending the gaming software transaction request to a gaming software authorization agent that approves or rejects the transfer of gaming software" for which Petitioner explains that "[t]his is taught by Goldberg and Olden for the same reasons discussed for limitations [28-1] and [28-2]." *Id.* at 53 (citing Pet. 32–39§ VII.C.1.). Petitioner also argues that "Goldberg's Web server 308 sends a message to database 28 to 'determin[e] the registration identity' of a player before transmitting blackjack game software to that player." *Id.*

Patent Owner essentially argues independent claims 28 and 84 together, asserting for both claims that "[t]he Petition fails to show that Goldberg and Olden, even when considered in combination, show the request and authorization messages, as claimed." PO Resp. 48. Patent Owner provided the following chart illustrating the similarity of the request and authorization messages, as between claims 28 and 84. *Id.* at 48–49

Claim	Claim Text
Claim 28:	receiving a ***gaming software download request message*** … from a first gaming device; … sending ***an authorization message*** to the first gaming device wherein ***the authorization message includes information indicating whether the first gaming device is authorized to transfer the gaming software to a second gaming device*** …

Claim	Claim Text
Claim 84:	receiving a ***gaming[software transaction request*** from the second gaming device; receiving an ***authorization message*** from the gaming software authorization agent wherein ***the authorization message includes information indicating whether the first gaming device is authorized to transfer the gaming software to the second [gaming] device***;

Patent Owner's chart above compares the method-type limitations of a "request message" and a "transaction request" between independent claims 28 and 84. As we discussed at length, above, Patent Owner does this by attacking Goldberg's disclosures, arguing for example, that "[a] POSITA would not recognize *any request* in the Goldberg system as a 'gaming software download request message,' as recited in claim 28." *Id.* at 52. Patent Owner does not substantively differentiate "a method of regulating a transfer of gaming software between two gaming devices," in claim 28 from the "method of transferring gaming software to a second gaming device," recited in claim 84, relying on the same arguments for claim 84 as it did for claim 28. PO Resp. 21–57; *see*, *e.g.*, *id.* at 51 (Patent Owner arguing that "Goldberg never states that the database 28 sends any 'authorization message,' as recited in claims 28 and 84").

Having considered the entire record now before us, including the arguments and evidence presented by both parties, we adopt and incorporate Petitioner's showing as to claim 84, as set forth in the Petition and summarized above, as our own. *See* Pet. 51–54. Accordingly, we are persuaded by Petitioner's arguments and evidence that claim 84 would have been obvious over Goldberg and Olden.

6. Dependent Claims 85–86, 90–92, and 99–100

Petitioner argues that dependent claims 85–86, 90–92, and 99–100 would have been unpatentable over Goldberg and Olden. Pet. 54–57. Petitioner provides additional arguments and also relies on its previous arguments with respect to corresponding claims and limitations with respect to claims 28, 29, 31–33, and 47–48.

For example, claim 85 requires "receiving an approval of the gaming software transaction request from the gaming software authorization agent." Ex. 1001, 48:8–10. Petitioner contends that, as previously argued with respect to "limitation [28-3]: Goldberg's database system 28 sends a message indicating whether gaming software transmission to a user device is authorized." Pet. 54 (citing Pet. Section VII.C.1.a.[28-3]). Petitioner also asserts that "Olden explains that its 'authorization server 24' can authorize software access by generating an 'ALLOW' message that 'permit[s] the user . . . to access the resource without any further rule processing.'" *Id.* at 54–55 (citing Ex. 1005, 8:22–25; Ex. 1003 ¶¶ 366–370).

Goldberg allows users to play a game by obtaining gaming software from a remote 'gaming controller 14' using either an 'Internet client node 318 having an appropriate World Wide Web browser' or a dedicated 'gaming station 18.' Pet. 47 (citing Ex. 1003 ¶¶ 301–304). Considering Goldberg's Figure 3, reproduced above, we can identify internet client node(s) 318 as a "gaming machine" consistent with the claimed "second gaming device." *See*, *e.g.*, Ex. 1001, 1:34–37 (The '089 patent explaining that "a game played on a gaming machine usually requires a player to input money or indicia of credit into the gaming machine, indicate a wager amount, and initiate a game play.").

Patent Owner does not substantively dispute that Goldberg and Olden teach these additional limitations of claims 85–86, 90–92, and 99–100. *See generally* PO Resp.

As for each of dependent claims 85–86, 90–92, and 99–100, we have considered, and on the complete record before us, accept as our own, Petitioner's arguments and evidence set forth at pages 51–100 of the Petition. Accordingly, we determine that Petitioner has shown by a preponderance of the evidence that dependent claims 85–86, 90–92, and 99–100 would have been obvious over Goldberg and Olden.

E. Ground 2: Claims 49 and 50 – Obviousness over Goldberg (Ex. 1004) Olden (Ex. 1005), and D'Souza (Ex. 1011)

On the complete record before us, Petitioner has shown by a preponderance of the evidence that claims 49 and 50 would have been obvious over Goldberg, Olden, and D'Souza.

1. D'Souza (Ex. 1011)

D'Souza is titled "Object Framework and Services for Periodically Recurring Operations" and issued on June 1, 2004. Ex. 1011, codes (54),

(45). D'Souza "relates generally to an object-oriented software framework that provides service to support periodically recurring operations, including change monitoring and updating of locally stored copies of remote documents so as to be available for off line use." *Id.* at 1:7–11.

D'Souza describes browsing an HTML document on-line by retrieving the document from its site on the Internet using a "well-known windows sockets network programming interface (also known as 'winsock')." *Id.* at 6:17–22. D'Souza's system implements operations that serve to monitor for changes or to periodically update data in the system. *Id.* at 6:65-67. D'Souza describes "[s]pecifically, the agent programs in the illustrated system implement updating operations for use by the operating system and application software (such as browser 51) to automatically monitor a specified document (e.g., HTML document 60) residing at a remote site on a computer network for changes and maintain an up-to-date locally stored copy of the document for later off-line use." *Id.* at 7:1–7.

2. Motivation to Combine D'Souza with Goldberg and Olden

Petitioner argues that a person of ordinary skill in the art would have known that "by using D'Souza's update checking system with Goldberg and Olden's systems, users could be provided with new, updated versions of gaming software whenever that software becomes available." Pet. 67 (citing Ex. 1003 ¶¶ 471–472). Mr. Crane testifies that D'Souza "would also allow any errors or bugs in previously provided software to be corrected so as to reduce the risk of the user encountering or experiencing an issue when playing a game." Ex. 1003 ¶ 472. Mr. Crane testifies further that "[b]ecause D'Souza's updating is automated, instead of user initiated, critical updates of software from Goldberg's and Olden's servers to either correct errors or

make new features available would be much more likely to be timely downloaded and installed." *Id.* ¶ 475.

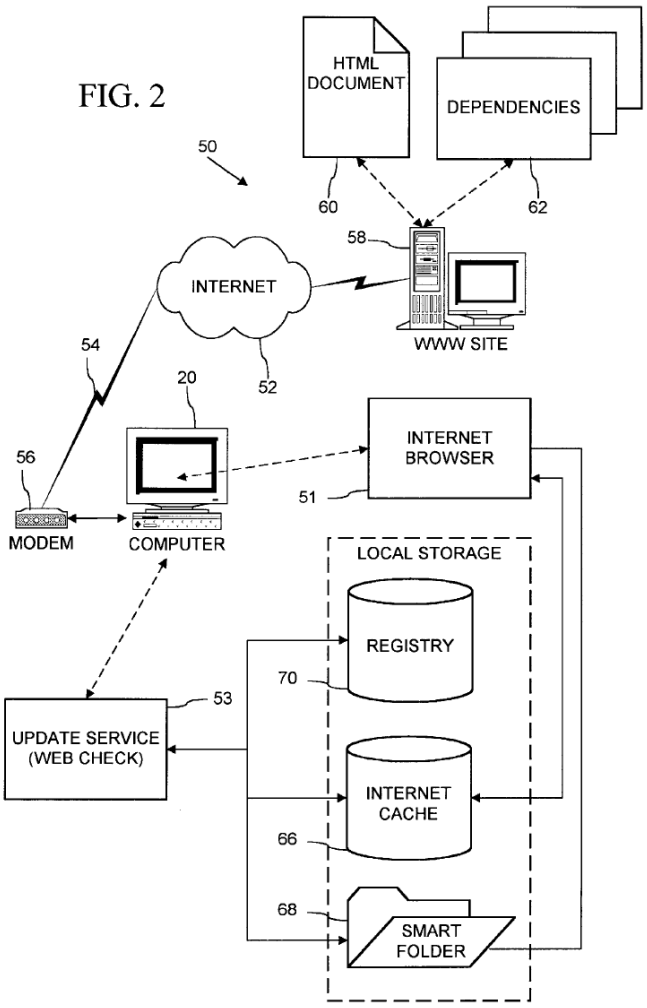
Patent Owner argues, first, that a person of ordinary skill in the art would not have combined D'Souza with Goldberg and Olden because "the concept underlying D'Souza's technique—that documents are available on the Internet for download—does not exist in the Goldberg system." PO Resp. 54 (citing Ex. 2031 ¶ 184–185). According to Patent Owner, "Goldberg's system simply has no documents for D'Souza's techniques to monitor." *Id.* (citing Ex. 2031 ¶ 184–185). Second, Patent Owner asserts that a person of ordinary skill in the art would not have undertaken update for Goldberg "because individual web pages are replaced by new web pages every time there is a change in game state." *Id.* (citing Ex. 1004, Fig. 5). For a third reason, Patent Owner argues that "[a] POSITA certainly would not set D'Souza's web check 53 to reissue Goldberg's player requests when the computer is idle—doing so would cause Goldberg's system to behave improperly by, for example, dealing to a player hand card(s) at a time when the player is sleeping." *Id.* at 56 (citing Ex. 2031 ¶ 189–194). Fourth, Patent Owner argues that Goldberg's games reside on game controller 14 and "Goldberg expressly teaches that, when new games are added, they are added to the game controller 14." *Id.* at 57 (citing Ex. 1004, 21:41–46).

Petitioner responds, arguing that Goldberg transmits "HTML files that result in the generation of game interfaces like that shown in Figure 1, a 'viewer program,' and a 'communications daemon.'" Pet. Reply 22 (citing Ex. 1004, 15:39–44, 29:3–10). In addition, contrary to Patent Owner's assertion that Goldberg's software is replaced every time the game changes, "Petitioner explained that it also would have been obvious to replace Goldberg's dynamically generated HTML files either in whole or in part

with other web-based software like applets . . . [t]his software would not be replaced every time the game state changes." *Id.*

As we discussed above, a person of ordinary skill in the art would have understood that Goldberg's HTML pages, as output by CGI scripts, provide on a client computer, i.e., the user's computer, a user interface for playing a blackjack game which would have been understood by those of ordinary skill in the art to be "gaming software," rather than simply data. D'Souza describes, essentially by way of background, and considering D'Souza's Figure 2 reproduced below, that HTML documents 60 including dependencies 62 are initially stored on a remote computer 58. Ex. 1011, 5:62–64.

FIG. 2



D'Souza's Figure 2 illustrates offline browsing environment 50 including client computer 20 "which uses an object-oriented framework . . . to provide periodically recurring change monitoring and updating operations." *Id.* at 3:55–58. D'Souza explains that "[i]n conformance with HTML, the illustrated document 60 can incorporate other additional information content 62, such as images, audio, video, executable programs, etc. (hereafter called 'dependencies' 62), which also reside at the remote computer 58." *Id.* at 6:8–12. D'Souza further describes that:

> [a]fter retrieving the document **60** from the site **58,** the browser **51** processes the HTML data to generate a view of the document, which the browser then displays on the computer's screen **30**

> (FIG. **1).** The browser stores a copy of any documents with their dependencies which are browsed on-line in an Internet cache **66** in the computer's local storage **42.**

Id. at 6:42–49.

Petitioner's declarant, Mr. Crane, provides three reasons why a person of ordinary skill in the art would have combined D'Souza with Goldberg. First, "applying D'Souza's update checking system to Goldberg and Olden's systems would allow users to be automatically provided with new, updated versions of gaming software whenever that software becomes available." Ex. 1003 ¶ 471. Second, "[i]t would also allow any errors or bugs in previously provided software to be corrected so as to reduce the risk of the user encountering or experiencing an issue when playing a game." *Id.* ¶ 472. And third, "D'Souza's system also allows for 'automated updating' that can occur 'unattended' without user intervention 'at detected idle on-line times.'" *Id.* ¶ 473 (citing (Ex. 1011, 10:46–51).

Patent Owner's declarant, Dr. Wills, testifies that where D'Souza anticipates a website that maintains HTML documents available to download on the internet, "Goldberg does not maintain documents on the web site 308 for browsing by client nodes 318." Ex. 2031 ¶ 184 (citing Ex. 1011, 5:57–61). Dr. Wills testifies further that "in Goldberg's system, there is no point to checking for web page updates because individual web pages are replaced by new web pages every time there is a change in game configuration." *Id.* ¶ 186. Further, Dr. Wills testifies that "[a] POSITA would see no reason to apply D'Souza's techniques to Goldberg's web pages because these web pages do not get updated except when a player is online and playing a game." *Id.* ¶ 189.

After considering both declarants' testimony in conjunction with the level of ordinary skill in the art, we credit Mr. Crane's testimony with respect to the combination of D'Souza, Goldberg, and Olden. Mr. Crane explains that "D'Souza's system is meant to be compatible and work with commercially available and widely used Web browsers like 'Microsoft® Internet Explorer' and all types of files available for download from the Web. This includes not only HTML, but also images, audio, video, and executable files." Ex. 1003 ¶ 480 (citing Ex. 1011, 5:23–24, 5:35–43, 5:57–6:17). While it may be that Goldberg does not explicitly discuss website 308 maintaining documents, the fact that Goldberg creates dynamic HTML files to facilitate game play does not mean that D'Souza would not be able to monitor Goldberg's website 308 for updates to HTML pages that define UIs.

Goldberg specifically discloses transmitting HTML files and UI game configurations to the player's client device. Ex. 1004, 15:39–44. And, D'Souza explains that "[i]n the illustrated system 50, the agent programs implement operations that serve to monitor for changes or to periodically update data in the system." Ex. 1011, 6:65–67. We appreciate that D'Souza discusses updating "data," for example in the HTML pages, but claims 49 and 50 only require an "upgrade" and "to correct an error," for a gaming software component, not necessarily an entirely new gaming software component. Ex. 1001, 45:3–8. For example, where Goldberg teaches transfer of a software component in the form of a UI to play a blackjack game from website 308 to client node 318, a person of ordinary skill in the art would have understood that D'Souza would monitor that UI on website 308 for updates or bug fixes to the UI, and update the UI, in part or in whole, on client node 318 "on either a scheduled basis or during idle

connection times at the user's option." Ex. 1011, 7:1–7, 8:23–25. Considering the disclosures in Goldberg and D'Souza, Mr. Crane explains persuasively that utilizing D'Souza's update checking system in Goldberg "would also allow any errors or bugs in previously provided software to be corrected so as to reduce the risk of the user encountering or experiencing an issue when playing a game." Ex. 1003 ¶ 472.

Also, Dr. Wills' testimony somewhat mischaracterizes Goldberg's disclosure that "individual web pages are replaced by new web pages every time there is a change in game configuration." *Id.* ¶ 186. This may be true during play of the blackjack game as the dealer and player hands are updated based on player request. *See* Ex. 1004, 19:20–27 (Goldberg explaining that a new card representation is provided upon player request). On the other hand, as Petitioner persuasively points out, "Goldberg does download dynamically prepared HTML files to user devices, but it also transmits other software. This includes HTML files that result in the generation of game interfaces like that shown in Figure 1, a 'viewer program,' and a 'communications daemon.'" Pet. Reply 22 (citing Ex. 1004, 15:39–44, 29:3–10). Similarly, Dr. Wills' position that the dynamically prepared HTML files are only updated when a player is playing a game fails to acknowledge that Goldberg discloses transmitting the HTML files resulting in UIs for the player at the client computer.

In our view, Petitioner's proposed analysis better comports with the "expansive and flexible approach" to obviousness set forth by the Supreme Court in *KSR*. "The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference." *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). Our inquiry is, therefore, not "whether the references could be physically

combined but whether the claimed inventions are rendered obvious by the teachings of the prior art as a whole." *In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc). Overall, despite the dynamic and changing HTML files that communicate blackjack game play data to the player disclosed by Goldberg, we find persuasive Petitioner's position that with respect to UIs "[t]his software would not be replaced every time the game state changes." Pet. Reply 22. And, particularly for UIs that are transferred to the client node or computer, we find Petitioner's evidence persuasive that it was well known in the art that "software can be—and in fact should be—routinely upgraded to ensure that the user has the most up-to-date version of a piece of software." Pet. 65 (citing Ex. 1003 ¶¶ 448–452; Ex. 1012, 1:13–16).

Based on the entire record, we determine that Petitioner has met its burden of proof regarding motivation to combine D'Souza with Goldberg and Olden.

3. Claims 49 and 50

Claims 49 and 50 each depend directly from independent claim 28. Ex. 1001, 45:3–8. Claim 49, for example, requires the additional limitation "wherein the gaming software is used to upgrade a gaming software component on the second gaming device." *Id.* at 45:3–5. Petitioner explains that although neither Goldberg or Olden discuss upgrading software games or components, "it was well known at the time the '089 patent was filed that downloaded software can be—and in fact should be—routinely upgraded to ensure that the user has the most up-to-date version of a piece of software." Pet. 64–65 (citing Ex. 1003 ¶¶ 448–452). In support, Mr. Crane testifies that D'Souza is an example of an update checking system for web browsers and downloaded materials in HTML files such as 'images, audio, video, executable programs, etc.' from Web sites over the Internet." Ex. 1003

¶ 455 (citing Ex. 1011, 5:16–43, 6:8–12, 6:18–22). According to Mr. Crane, "[o]nce an HTML file or other Web-based content is downloaded to a user's device, D'Souza's 'system 50 . . . implement[s] operations that serve to monitor for changes or to periodically update' the downloaded files." *Id.* ¶ 456 (citing Ex. 1011, 6:65–67).

Patent Owner makes the argument, with respect to the claims themselves, that Goldberg only adds new games to game controller 14, and similarly, that "bug fixes to the gaming modules . . . also would be applied to the game controller 14." PO Resp. 57 (citing Ex. 2031 ¶¶ 167–168). Therefore, Patent Owner argues, updates or bug fixes "would not be applied to the Internet client nodes 318 or to the web pages, which are ephemeral. [] Any updates or bug fixes applied to the web pages themselves would be nullified as games progress toward their conclusions and the CGI scripts create new HTML web pages that replace prior web pages." *Id.*

This argument again ignores the fact that Goldberg teaches transferring gaming software in the form of HTML file based UIs to client nodes 318 that, as discussed above, are not altered, changed, or replaced when the game state changes, for instance when a player requests a new card or hand.

We have considered, and on the complete record at this point in the proceeding, find persuasive Petitioner's arguments and evidence set forth at pages 64–68 of the Petition. Accordingly, we determine that Petitioner has shown preponderant evidence that claims 49 and 50 would have been obvious in view of Goldberg, Olden, and D'Souza.

F. Interference Estoppel

Patent Owner again raises the issue of interference estoppel under 37 CFR § 41.127 in its Patent Owner Response, just as it did in the Preliminary Response to the Petition. PO Resp. 61–64; Prelim. Resp. 1–19.

In our Institution Decision we determined that to the extent interference estoppel applied, under the circumstances in this case, it was appropriate to waive the requirements of Section 41.127(a)(1) as applied to Petitioner's unpatentability challenges in this proceeding. *See* 37 C.F.R. § 42.5(b) ("The Board may waive or suspend a requirement of parts 1, 41, and 42 and may place conditions on the waiver or suspension."). Subsequently, Patent Owner filed a Request for Rehearing and Precedential Opinion Panel Review, raising issues of interference estoppel under 37 C.F.R. § 41.127(a)(1), which was denied on August 22, 2022. Paper 13. Director Vidal, Under Secretary of Commerce for Intellectual Property and Director of the United States Patent and Trademark Office, *sua sponte* granted Director Review, affirming our Decision on Institution explaining, "[b]ecause I find that interference estoppel does not apply . . . I need not reach the issue of whether the Board properly waived interference estoppel." Paper 17, 3.

III. CONCLUSION[9]

For the reasons discussed above, we determine Petitioner meets its burden of establishing, by a preponderance of the evidence, that the challenged claims are unpatentable, as summarized in the following table:

[9] Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 Notice

Claims	35 U.S.C. §	Reference(s)/ Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
28–29, 31–33, 47–48, 84–86, 90–92, 99–100	103(a)	Goldberg, Olden	28–29, 31–33, 47–48, 84–86, 90–92, 99–100	
49, 50	103(a)	Goldberg, Olden, D'Souza	49, 50	
Overall Outcome			28–29, 31–33, 47–50, 84–86, 90–92, 99–100	

IV. ORDER

For the reasons given, it is

ORDERED that, based on a preponderance of the evidence claims 28–29, 31–33, 47–50, 84–86, 90–92, and 99–100 of the '089 patent have been shown to be unpatentable; and

FURTHER ORDERED that, because this is a Final Written Decision, any party to the proceeding seeking judicial review of this Decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding. *See* 84 Fed. Reg. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. *See* 37 C.F.R. § 42.8(a)(3), (b)(2).

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