UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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BUNGIE, INC.,
Petitioner,

v.

WORLDS INC.,
Patent Owner.

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Case IPR2015-01268
Patent 7,181,690 B1

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Before KARL D. EASTHOM, KERRY BEGLEY, and JASON J. CHUNG,
Administrative Patent Judges.

BEGLEY, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

Bungie, Inc. ("Petitioner") filed a Petition requesting *inter partes* review of claims 1–20 of U.S. Patent No. 7,181,690 B1 (Ex. 1001, "'690 patent"). Paper 3 ("Pet."). Pursuant to 35 U.S.C. § 314(a), we determined the Petition showed a reasonable likelihood that Petitioner would prevail in establishing the unpatentability of claims 1–8, 10–17, and 19 ("instituted claims"), and instituted *inter partes* review of these claims on

certain asserted grounds of unpatentability. Paper 17 ("Inst. Dec."). We, however, did not institute review of claims 9, 18, and 20, because we determined the Petition did not show a reasonable likelihood that Petitioner would prevail with respect to these claims. *Id.* at 4–8.

After institution, Patent Owner Worlds Inc. ("Patent Owner") filed a Patent Owner Response (Paper 23 ("Resp.")) and a Supplement to the Response (Paper 25 ("Supp. Resp.")). Petitioner filed a Reply to Patent Owner's Response. Paper 34 ("Reply").

Patent Owner filed a Motion to Exclude. Paper 36 ("Mot."). Petitioner filed an Opposition to the Motion (Paper 39 ("Opp.")), to which Patent Owner filed a Reply (Paper 41 ("Mot. Reply")).

An oral hearing was held before the Board. Paper 43 ("Tr.").

We issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. Having considered the record before us, we determine Petitioner has shown by a preponderance of the evidence that claims 1–3, 5–7, 10–12, 14, 15, 17, and 19 of the '690 patent are unpatentable. *See* 35 U.S.C. § 316(e). Petitioner, however, has not demonstrated by a preponderance of the evidence that claims 4, 8, 13, and 16 are unpatentable.

I. BACKGROUND

A. RELATED PROCEEDINGS

The parties indicate that Patent Owner has asserted the '690 patent in a case before the U.S. District Court for the District of Massachusetts ("District Court"), *Worlds, Inc. v. Activision Blizzard, Inc.*, Case No. 1:12-cv-10576-DJC (D. Mass.) ("District Court Case"). Pet. 7–8; Paper 6. In addition, patents related to the '690 patent are the subject of *inter partes* reviews, based on petitions filed by Petitioner: IPR2015-01264, challenging

U.S. Patent No. 7,945,856 B2 ("'856 patent"); IPR2015-01269, challenging

U.S. Patent No. 7,493,558 B2 ("'558 patent"); IPR2015-01319, challenging

U.S. Patent No. 8,082,501 B2 ("'501 patent"); IPR2015-01321 and

IPR2015-01325, challenging U.S. Patent No. 8,145,998 B2 ("'998 patent").

See Pet. 7–8; Paper 6.

B. THE '690 PATENT

The '690 patent discloses a highly-scalable "client-server

architecture" for a "graphical, multi-user, interactive virtual world system."

Ex. 1001, [57], 2:24–26, 2:62–66. In the preferred embodiment, each user

chooses an avatar to "represent the user in the virtual world," *id.* at 3:15–18,

and "interacts with a client system," which "is networked to a virtual world

server," *id.* at 3:4–5. "[E]ach client . . . sends its current location, or changes

in its current location, to the server." *Id.* at 3:31–34; *see id.* at 2:32–36.

In the preferred embodiment, the system implements a "crowd

control" function, which determines "[w]hether another avatar is in range"

and "is needed in some cases to ensure that neither client 60 nor user A get

overwhelmed by the crowds of avatars likely to occur in a popular virtual

world." *Id.* at 5:29–35; *see id.* at 2:57–58. "Server 61 maintains a variable,

N, which sets the maximum number of other avatars [user] A will see,"

whereas client 60 "maintains a variable, N', which might be less than N,"

indicating "the maximum number of avatars client 60 wants to see and/or

hear." *Id.* at 5:35–41; *see id.* at 13:27–29. These limits of N and N' avatars

"[g]enerally" "control how many avatars [user] A sees." *Id.* at 5:55–58.

Server 61 tracks the location and orientation of each user's avatar and

maintains a list of the "N nearest neighboring remote avatars" for each

user's avatar. *Id.* at 5:45–49, 13:30–33, 14:38–43. "[A]s part of crowd

control," the server notifies client 60 for a user "regarding changes in the N

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closest remote avatars and their locations." *Id.* at 14:43–49. On the client-side, "[w]here N' is less than N, the client also uses position data to select N' avatars from the N provided by the server." *Id.* at 6:6–8.

The specification explains that in the preferred embodiment, client 60, used by user A, features remote avatar position table 112 and current avatar position register 114. *Id.* at 2:57–58, 4:49–62, Fig. 4. "Current avatar position register 114 contains the current position and orientation of [user] A's avatar in the virtual world." *Id.* at 5:19–20. Remote avatar position table 112, in turn, "contains the current positions of the 'in range' avatars near [user] A's avatar." *Id.* at 5:29–31; *see id.* at 5:53–54, 6:1–6.

The client executes a process to render a "view" of the virtual world "from the perspective of the avatar for that . . . user." *Id.* at [57], 2:28–30, 3:20–23, 4:42–48, 7:50–54. In the preferred embodiment, client system 60 executes a graphical rendering engine program to "generate[] the user's view of the virtual world." *Id.* at 2:57–58, 4:42–48. "In rendering a view, client 60 requests the locations, orientations and avatar image pointers of neighboring remote avatars from server 61 and the server's responses are stored in remote avatar position table 112." *Id.* at 7:42–45. "Rendering engine 120 then reads register 114 [and] remote avatar position table 112," as well as databases holding avatar images and the layout of the virtual world, and "renders a view of the virtual world from the view point (position and orientation) of [user] A's avatar." *Id.* at 7:50–59; *see id.* at 6:40–42, 7:36–41.

C. ILLUSTRATIVE CLAIM

Of the instituted claims, claims 1, 6, 10, 11, and 15 of the '690 patent are independent. *Id.* at 19:30–22:13. Claim 1 is illustrative of the recited subject matter and is reproduced below.

      1. A method for enabling a first user to interact with other users in a virtual space, wherein the first user and the other users each have an avatar and a client process associated therewith, and wherein each client process is in communication with a server process, wherein the method comprises:

      (a) receiving a position of less than all of the other users' avatars from the server process; and

      (b) determining, from the received positions, a set of the other users' avatars that are to be displayed to the first user,

      wherein steps (a) and (b) are performed by the client process associated with the first user.

Id. at 19:31–42. In this Decision, we refer to step (a) as the "receiving step" and step (b) as the "determining step."

D. INSTITUTED GROUNDS OF UNPATENTABILITY

We instituted *inter partes* review of claims 1–8, 10–17, and 19 of the '690 patent on the following grounds of unpatentability asserted in the Petition. Inst. Dec. 39.

Claims	Basis	Reference(s)
1–3, 5–7, 10–12, 14, 15, 17, 19	§ 102[1]	Thomas A. Funkhouser, *RING: A Client-Server System for Multi-User Virtual Environments*, in 1995 SYMPOSIUM ON INTERACTIVE 3D GRAPHICS 85 (1995) (Ex. 1005, "Funkhouser")
4, 8, 13, 16	§ 103	Funkhouser, and Thomas A. Funkhouser & Carlo H. Séquin, *Adaptive Display Algorithm for Interactive Frame Rates During Visualization of Complex Virtual Environments*, in COMPUTER GRAPHICS PROCEEDINGS: ANNUAL CONFERENCE SERIES 247 (1993) (Ex. 1017, "Funkhouser '93")
1–3, 5–7, 10–12, 14, 15, 17, 19	§ 102	U.S. Patent No. 5,659,691 (filed Sept. 23, 1993) (issued Aug. 19, 1997) (Ex. 1008, "Durward")

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[1] The Leahy-Smith America Invents Act ("AIA"), Pub. L. No. 112–29 (2011), revised 35 U.S.C. §§ 102–103, effective March 16, 2013. Because the '690 patent has an effective filing date before this date, we refer to the pre-AIA versions of §§ 102 and 103 throughout this Decision.

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