

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE PATENT TRIAL AND APPEAL BOARD

---

ACTIVISION BLIZZARD, INC.,  
ELECTRONIC ARTS INC.,  
TAKE-TWO INTERACTIVE SOFTWARE, INC.,  
2K SPORTS, INC., and  
ROCKSTAR GAMES, INC.,  
Petitioner,

v.

ACCELERATION BAY, LLC,  
Patent Owner.

---

Case IPR2016-00747  
Patent 6,732,147 B1

---

Before SALLY C. MEDLEY, LYNNE E. PETTIGREW, and  
WILLIAM M. FINK, *Administrative Patent Judges*.

FINK, *Administrative Patent Judge*.

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

## I. INTRODUCTION

Activision Blizzard, Inc., Electronic Arts Inc., Take-Two Interactive Software, Inc., 2K Sports, Inc., and Rockstar Games, Inc. (collectively, “Petitioner”) filed a Corrected Petition requesting an *inter partes* review of claims 1–16 of U.S. Patent No. 6,732,147 B1 (Ex. 1001, “the ’147 patent”). Paper 6 (“Pet.”). On June 28, 2016, Patent Owner, Acceleration Bay LLC, filed a Preliminary Response. Paper 11 (“Prelim. Resp.”). On September 12, 2016, we instituted trial as to claims 6–10 of the ’147 patent. Paper 13 (“Decision to Institute” or “Inst. Dec.”).

After institution, Patent Owner filed a Patent Owner Response. Paper 24 (confidential); Paper 25 (public) (“PO Resp.”).<sup>1</sup> Petitioner filed a Reply to the Patent Owner Response. Paper 38 (public) (“Pet. Reply”); Paper 40 (confidential). Patent Owner filed a Motion to Exclude, Paper 44 (“Mot. Exc.”), Petitioner filed an Opposition, Paper 45, and Patent Owner filed a Reply, Paper 46. An oral hearing was held on May 17, 2017. A transcript of the hearing has been entered into the record. Paper 49 (“Tr.”).

This Final Written Decision (“Decision”) is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we conclude Petitioner has not demonstrated that claims 6–10 of the ’147 patent are unpatentable by a preponderance of the evidence.

### A. Related Matters

Petitioner and Patent Owner identify the following pending matters as relating to the ’147 patent: *Activision Blizzard, Inc. v. Acceleration Bay LLC*, Case No. 3:16-cv-03375 (N.D. Cal., filed June 16, 2016); *Electronic*

---

<sup>1</sup> No confidential versions of the parties’ papers or exhibits are cited or reproduced herein.

*Arts Inc. v. Acceleration Bay LLC*, Case No. 3:16-cv-03378 (N.D. Cal., filed June 16, 2016); *Take-Two Interactive Software, Inc. et al. v. Acceleration Bay LLC*, Case No. 4:16-cv-03377 (N.D. Cal., filed June 16, 2016); *Acceleration Bay LLC v. Activision Blizzard, Inc.*, Case No. 1:16-cv-00453 (D. Del., filed June 17, 2016); *Acceleration Bay LLC v. Electronic Arts Inc.*, Case No. 1:16-cv-00454 (D. Del., filed June 17, 2016); *Acceleration Bay LLC v. Take-Two Interactive Software, Inc. et al.*, Case No. 1:16-cv-00455 (D. Del., filed June 17, 2016). Paper 9, 1; Paper 10, 2–3.

In addition, the '147 patent is related to patents at issue in the following *inter partes* reviews for which final decisions have been issued: IPR2015-01951, IPR2015-01953, IPR2015-01964, IPR2015-01970, IPR2015-01972, and IPR2015-01996. Paper 9, 1; Paper 10, 3–4. The '147 patent is also related to patents at issue in the following instituted *inter partes* review: IPR2016-00724. Paper 9, 1; Paper 10, 3–4.

### *B. The '147 Patent*

The '147 patent relates “to a broadcast channel for a subset of a computers [sic] of an underlying [computer] network.” Ex. 1001, 1:29–31. The network consists of a graph of point-to-point connections between host computers (or nodes) through which the broadcast channel is implemented. *Id.* at 4:25–28. Figure 1 of the '147 patent is reproduced below:

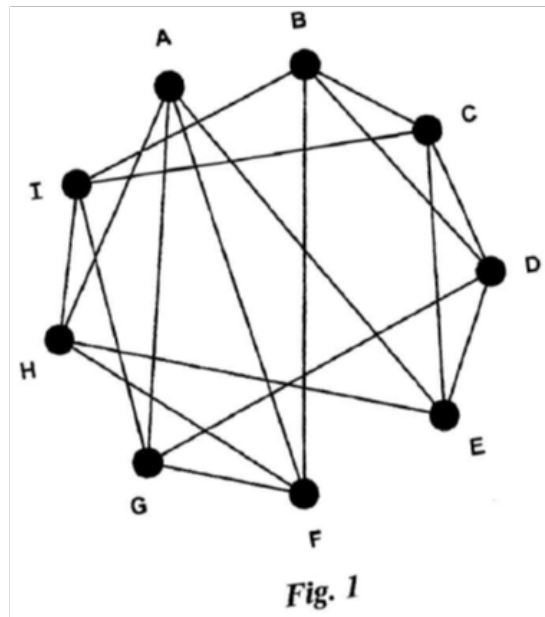
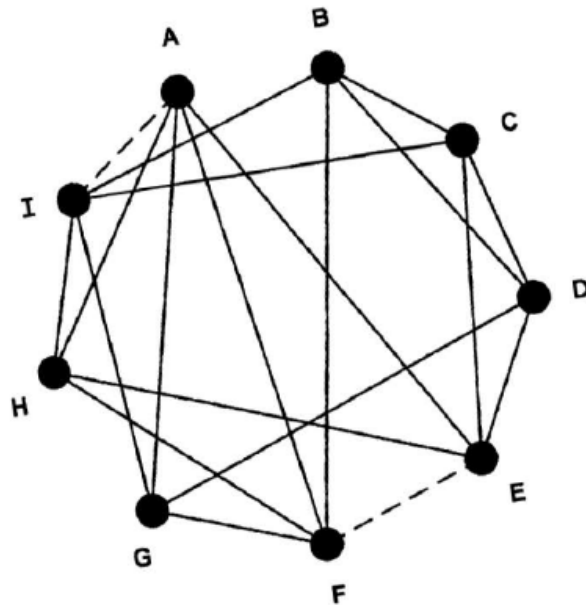


Figure 1 illustrates a broadcast channel represented by a “4-regular and 4-connected” graph. *Id.* at 4:50–51. The graph of Figure 1 is “4-regular” because each node is connected to four other nodes (e.g., node A is connected to nodes E, F, G, and H). *Id.* at 4:40–41.

The ’147 patent provides a method for the disconnection of a first host computer from a second computer in the network. Ex. 1001, Abstract. Figure 5A of the ’147 patent is reproduced below:



*Fig. 5A*

Figure 5A illustrates the disconnecting of a computer (node H) from the broadcast channel in a planned manner. *Id.* at 9:19–20. “When computer H decides to disconnect, it sends its list of neighbors to each of its neighbors (computers A, E, F, and I) and then disconnects from each of its neighbors.” *Id.* at 9:20–23. When computers I and A receive a disconnect message they establish connections between themselves as indicated by the dashed line. *Id.* at 23–25. Computers E and F similarly establish a connection between themselves. *Id.* at 9:25–26. The ’147 patent also provides methods for disconnecting a computer in an unplanned manner. *See id.* at 9:27–51.

### *C. Illustrative Claims*

Claim 6 is the sole independent claim at issue. Claims 7–10 directly or indirectly depend from claim 6, which is illustrative of the claimed invention and is reproduced below:

6. A method for healing a disconnection of a first computer from a second computer, the computers being connected to a broadcast channel, said broadcast channel being an  $m$ -regular graph where  $m$  is at least 3, the method comprising:

attempting to send a message from the first computer to the second computer; and

when the attempt to send the message is unsuccessful, broadcasting from the first computer a connection port search message indicating that the first computer needs a connection; and

having a third computer not already connected to said first computer respond to said connection port search message in a manner as to maintain an  $m$ -regular graph.

Ex. 1001, 29:12–26.

#### *D. Pending Grounds of Unpatentability*

The only pending ground of unpatentability challenges claims 6–10 as directed to obvious subject matter, under 35 U.S.C. § 103(a), over the teachings of Shoubridge,<sup>2</sup> Denes,<sup>3</sup> Rufino,<sup>4</sup> and Todd.<sup>5</sup>

---

<sup>2</sup> Peter J. Shoubridge & Arek Dadej, *Hybrid Routing in Dynamic Networks*, 3 IEEE INT’L CONF. ON COMMS. CONF. REC. 1381–86 (Montreal 1997) (Ex. 1005) (“Shoubridge”).

<sup>3</sup> Tamas Denes, *The “Evolution” of Regular Graphs of Even Order by their Vertices*, MATEMATIKAI LAPOK 365–377 (27th ed. 1976–1979) (Ex. 1016) and certified English translation of Ex. 1016 (Ex. 1017) (“Denes”).

<sup>4</sup> Jose Rufino *et al.*, *A Study On The Inaccessibility Characteristics Of ISO 8802/4 Token-Bus LANs*, IEEE INFOCOM ’92 (1992) (Ex. 1011) (“Rufino”).

<sup>5</sup> Terence Todd, *The Token Grid Network*, 2.3 IEEE Trans. Networking 279 (June 1994) (Ex. 1019) (“Todd”).

## II. DISCUSSION

### *A. Level of Ordinary Skill in the Art*

Citing its declarant, Dr. Karger, Petitioner contends that a person of ordinary skill in the art would have a minimum of:

- (1) a bachelor's degree in computer science, computer engineering, applied mathematics, or a related field of study; and
- (2) four or more years of industry experience relating to networking protocols or network topologies. Karger ¶¶ 16–22. Additional graduate education could substitute for professional experience, or significant experience in the field could substitute for formal education. *Id.*

Pet. 13. Patent Owner's expert, Dr. Goodrich, opines that a person of ordinary skill would be "someone with a bachelor's degree in computer science or related field, and either (1) two or more years of industry experience and/or (2) an advanced degree in computer science or related field." Ex. 2001 ¶ 24.

We do not discern substantial differences in the parties' proposed descriptions of the level of ordinary skill in the art. Both require at least an undergraduate degree in computer science or related technical field, and both require at least two years of industry experience (although Petitioner proposes four years), but both agree that an advanced degree could substitute for work experience. We adopt Petitioner's proposed definition as more representative, but note that our analysis would be the same under either definition.

### *B. Claim Interpretation*

In an *inter partes* review, claim terms in an unexpired patent are given their "broadest reasonable construction in light of the specification of the patent in which they appear." 37 C.F.R. § 42.100(b); *see also Cuozzo Speed*

*Techs., LLC v. Lee*, 136 S. Ct. 2131, 2142 (2016) (holding that the Patent Office had the “legal authority to issue its broadest reasonable construction regulation”). Under the broadest reasonable construction standard, claim terms are presumed to have their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. “*m*-regular”

Petitioner proposes the term “*m*-regular,” recited in independent claim 6, means “each node is connected to exactly *m* other nodes.” Pet. 13 (citing Ex. 1001, 4:40–50, 14:51–15:6). Patent Owner does not offer a construction of this term. Prelim. Resp. 10; PO Resp. 12–13. For purposes of the Decision to Institute, we agreed that Petitioner’s proposed construction accords with the broadest reasonable construction consistent with the Specification, which, for example, explains that a graph in which each node is connected to four other nodes is referred to as a 4-regular graph. Ex. 1101, 4:40–41, 5:55–57 (“Since the broadcast channel is a 4-regular graph, each of the identified computers is already connected to four computers.”). In the absence of dispute, we see no need to alter the construction here. Accordingly, we construe “*m*-regular” to mean “each node is connected to exactly *m* other nodes.”

2. *Preamble*

In the Decision to Institute, based on the parties’ contentions, we considered whether the preamble is a limitation. Inst. Dec. 8–10. We determined it is a limitation because it provides antecedent basis for terms in the body of the claim and was in part relied upon during prosecution to

distinguish the prior art. *Id.* Neither party disputes that determination, and we see no reason to alter it here.

3. “*broadcast channel*”

In its Response, Patent Owner contends

[t]he term “broadcast channel” is properly construed as a “logical channel that overlays an underlying point-to-point communications network.” ’147 Patent at 4:17-21 (defining a “broadcast channel” as a logical network “implemented using an underlying network system that sends messages on a point-to-point basis”); Goodrich Decl. ¶¶ 50-52.

PO Resp. 13.

Petitioner contends “the plain language of claim 6 makes it clear that connections between *computers* form the broadcast channel.” Pet. Reply 4 (citing Ex. 1001, 29:19–26). Petitioner also contends that the specification does not “defin[e],” as Patent Owner alleges, a broadcast channel, but merely characterizes the logical network implemented on the underlying network as “one embodiment.” *Id.* at 4–5 (quoting Ex. 1001, 4:10–12). We agree with Petitioner.

Petitioner is correct that Patent Owner’s sole citation to the specification does not define the “broadcast channel,” but characterizes it as “one embodiment.” Ex. 1001, 4:10–12. Elsewhere, the specification refers to broadcast channel more broadly in terms of computers connected in an *m*-regular graph, similar to claim 6, which requires “said broadcast channel being an *m*-regular graph where *m* is at least 3.” For example, the specification explains at column 4, lines 50–55 that “*FIG. 1 illustrates a graph that is 4-regular and 4-connected which represents the broadcast channel.* Each of the nine nodes A–I represents a computer that is connected

to the broadcast channel . . . .” (emphasis added). *See also id.* at 2:53–58, Figs. 4A–C (illustrating other broadcast channel embodiments).

Thus, consistent with Petitioner’s contention, a broadcast channel comprises computers connected according to some topology, e.g., 4-regular and 4-connected. Because the specification and claim use the term consistently and broadly to refer to connections between computers, we determine that no further construction of “broadcast channel” beyond the requirements placed on it by the claims themselves is necessary.

4. “*connection*” and “*connected*”

In its Response, Patent Owner contends “‘connection’ is properly construed as ‘an edge between two application programs connected to a logical broadcast channel that overlays an underlying network’ and ‘connected’ as ‘having a connection.’” PO Resp. 13. Patent Owner further contends that the terms *connected* and *connection* refer to the “edges” connecting the participants, or “application programs.” *Id.* (citing Ex. 1001, 4:51–55); Ex. 2003 ¶¶ 53–56).

Petitioner contends Patent Owner’s proposed construction is inconsistent with the claims and the specification. Pet. Reply 2–3. For example, Petitioner contends Patent Owner’s proposal that connections between application programs is not consistent with the claims, which require connections between *computers*, and the specification, which repeatedly describes connections between computers. *Id.* at 3. We agree with Petitioner.

The claims specifically describe connections and “disconnections” in terms of computers, not application programs. *See* Ex. 1001, 29:12–15, 29:40–42 (reciting “computers . . . connected to at least three other

computers”). Similarly, the specification also describes connections as between computers, including at column 4, lines 53–55 (“[E]ach of the edges represents an ‘edge’ *connection between two computers of the broadcast channel.*” (emphasis added)), cited by Patent Owner. *See also id.* at 4:26–27 (“point-to-point connections (i.e., edges) between host computers (i.e., nodes)”; 5:6–7 (“[A] message sent by any computer would traverse no more than two connections to reach every other computer [in Fig. 1]”). Moreover, a connection allows messages to be sent between computers. *See, e.g.,* Ex. 1001, 28:57–58 (“the first computer sends a disconnect message to the second computer”). Conversely, according to claim 6, computers that are *disconnected* are not able to send messages between each other. *See id.* at 29:12–19.

In addition to Patent Owner’s contention that connections connect application programs, Patent Owner’s proposed construction requires that a connection be to a logical broadcast channel that overlays an underlying network. This requirement, however, is similar to Patent Owner’s proposed construction of broadcast channel (i.e., “logical channel that overlays an underlying point-to-point communications network”). We disagree with including this additional requirement in the construction of “connection” for the reasons discussed above.

Petitioner does not propose its own construction for “connection” and “connected.” For reasons discussed below, we determine that no further construction is necessary.

*C. Obviousness of Claims 6–10 over  
Shoubridge, Denes, Rufino, and Todd*

Petitioner contends claims 6–10 would have been obvious over the combination of Shoubridge, Denes, Rufino, and Todd. Pet. 29–41, 58–60. Petitioner also relies upon Dr. Karger to support its contentions. Ex. 1003. Patent Owner disputes Petitioner’s contentions and relies upon Dr. Goodrich for support. PO Resp. 14–57; Ex. 2001. To prevail in its challenge to Patent Owner’s claims, Petitioner must demonstrate by a preponderance of the evidence that the claims are unpatentable. 35 U.S.C. § 316(e); 37 C.F.R. § 42.1(d). We begin our discussion with brief summaries of the references and then address the parties’ contentions.

*1. Shoubridge (Ex. 1005)*

Shoubridge describes techniques for routing messages to all the participants in a communications network. Ex. 1005, 1381. Specifically, Shoubridge models a communication network as a graph in which “[e]ach node functions as a source of user traffic entering the network where traffic can be destined to all other nodes within the network.” *Id.* at 1382. In a specific example (not depicted in a figure), Shoubridge describes a “64 node network with connectivity of degree 4” modeled as a “large regular graph forming a manhattan grid network that has been wrapped around itself as a torus.” *Id.* at 1383. Shoubridge describes a routing protocol called “constrained flooding, the most efficient way to flood an entire network.” *Id.* at 1382. In constrained flooding, a packet received at a node is rebroadcast on all links except the link it was received on, and packets are numbered such that if “packets revisit a node with the same sequence number, they are discarded.” *Id.* at 1383. Shoubridge describes simulations

using both constrained flooding and minimum hop algorithms that use routing tables. *Id.* at 1382–84.

## 2. Denes (Ex. 1016)

Denes describes even-order regular graphs with  $k$  vertices,  $\Gamma_k$ .

Ex. 1017, 365. Figure 2 of Denes is reproduced below:

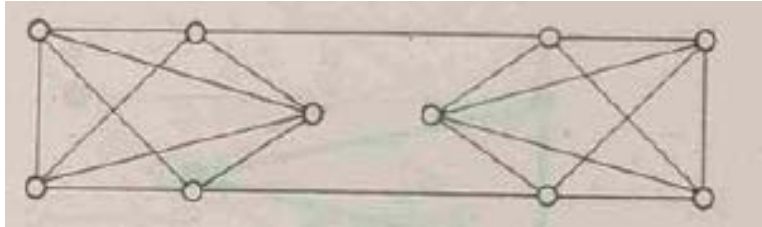


Figure 2 depicts a 4-regular graph with 10 vertices or nodes. *Id.* at 367.<sup>6</sup>

Denes discloses a transformation  $ET^{-1}$  for removing a node “ $p$ ” from the graph by removing the connections between  $p$  and its neighbors  $p_1, p_2, \dots, p_k$  and then connecting  $p_1, p_2, \dots, p_k$  as follows: “ $ET^{-1}: \Gamma_k \rightarrow \Gamma_{k-1} = (P', E')$ ,  $P' = P \setminus \{p\}$ ;  $E' = E \setminus \{ (pp_1), (pp_2), \dots, (pp_k) \} \cup \{ (p_1p_2), (p_3p_4), \dots, (p_{k-1}p_k) \}$ .” *Id.* at 366.

## 3. Rufino (Ex. 1011)

Rufino describes a token bus based local area network. Ex. 1011, 958. Specifically, Rufino describes a “token passing protocol, which establishes a logical ring over the physical bus. Access to the shared broadcast medium for data transmission is only granted to the station which currently holds the token.” *Id.* at 959. Among other things, Rufino includes procedures for when a station or computer leaves the network whether in “an

---

<sup>6</sup> The page numbers in the untranslated version of Denes (Ex. 1016) are at the bottom of each page. Therefore, the page number cites to the English translation of Denes (Ex. 1017) refer to the material above the cited page number.

abrupt or orderly way.” *Id.* at 962. In the orderly-leave scenario, the leaving station must hold the token and, before passing it, issues a *set\_successor* frame addressed to its predecessor station and carrying the address of its future successor station. *Id.* In the abrupt-leave scenario, a station fails and the token passing operation will not succeed. *Id.* at 962–963. After a specific period, the current token-holding station issues a *who\_follows* query and waits to receive a response from the successor of the failed station to end the recovery procedure. *Id.* at 963.

#### 4. Todd (Ex. 1019)

Todd describes a “token grid network,” which “is a multidimensional extension of the token ring where stations share access to a mesh formed by a set of overlapping rings.” Ex. 1019, 279 (internal citations omitted). For example, Todd discloses “a two dimensional network structure arranged in  $R$  rows and  $C$  columns.” *Id.* Figure 1 of Todd is reproduced below:

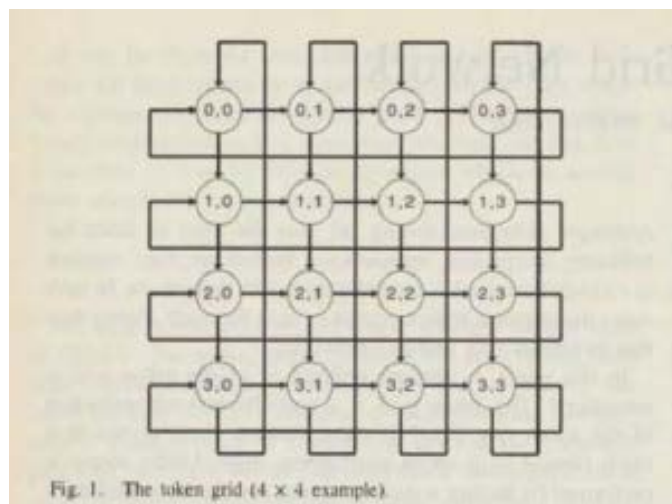


Figure 1 of Todd discloses a two-dimensional structure of 4 rows and 4 columns (i.e.,  $R = C = 4$ ). *Id.* Couplings between the stations in Todd are implemented in “a very simple fashion and under token control.” *Id.*

### 5. Claim 6

Petitioner presents a proposed mapping of Shoubridge, Denes, Rufino, and Todd to independent claim 6. Pet. 29–37; *see also* Ex. 1003 ¶¶ 161–176. Petitioner contends Shoubridge discloses a broadcast channel in the form of an  $m$ -regular graph, where  $m$  is at least 3, as required by claim 6’s preamble, based on its description of a 64 node Manhattan grid network with connectivity of degree 4. Pet. 29 (citing Ex. 1005, 1383 (“The [64 node] network is a large regular graph forming a manhattan grid network.”)). Petitioner contends Denes describes a method for disconnecting a first computer from a second computer in a network having an  $m$ -regular graph topology where  $m$  is at least 3. Pet. 29–30 (citing Ex. 1017, 365–366, Fig. 2); *see also* Ex. 1003 ¶ 163. Petitioner contends each of Shoubridge, Denes, and Rufino discloses “attempting to send a message from the first computer to the second computer,” as the body of claim 6 recites. Pet. 30–31 (citing, e.g., Ex. 1005, 1381; Ex. 1017, 365; Ex. 1011, 962–963).

Claim 6 also requires “when the attempt to send the message is unsuccessful, broadcasting from the first computer a connection port search message indicating that the first computer needs a connection.” Petitioner contends Rufino’s description of an unplanned disconnect of a station, followed by a *who\_follows* query, teaches the recited broadcast of a connection port search message by the first computer. Pet. 33–34 (citing Ex. 1011, 962–963 (“If this station is failed, the token passing operation will not succeed. After the token pass checking period (one slot time) has elapsed a recovery strategy is tried. This includes the repetition of token transmission (checked during one more slot time) followed by a variant of the *solicit successor procedure*. During this *who follows* query the current token

holder waits for a *set\_successor* frame, until the end of a three-slot-time period.”)).

Finally, claim 6 recites “having a third computer not already connected to said first computer respond to said connection port search message in a manner as to maintain an m-regular graph.” According to Petitioner, the successor to the failed station in Rufino (i.e., the third computer) responds to the *who\_follows* query to establish the new successor in a token ring network, so as to maintain an m-regular graph as the claim requires. Pet. 34–36 (citing Ex. 1011, 962–963 (“Under a single station failure assumption, the current token holder will receive, within this period, a response from the successor of the failed station.”); Ex. 1003 ¶¶ 173–174).

- a. *Whether the combination teaches “having a third computer not already connected to said first computer respond to said connection port search message in a manner as to maintain an m-regular graph”*

In its Response, Patent Owner argues the cited prior art does not teach a “third computer not already connected to said first computer [to] respond to said connection port search message,” as claim 6 requires. PO Resp. 29–30. Patent Owner contends Rufino relates specifically to token *bus* LANs as standardized under IEEE 802.4. PO Resp. 28. Citing the Tanenbaum reference (Ex. 2007),<sup>7</sup> Patent Owner contends token bus has a physical tree-shaped network onto which stations are attached and a logical ring which controls access. *Id.* at 28 (citing Ex. 2007, 287; Ex. 1011, 959). Figure 4-25 of Tanenbaum is reproduced below:

---

<sup>7</sup> Andrew Tanenbaum, *COMPUTER NETWORKS* (3d ed. 1996).

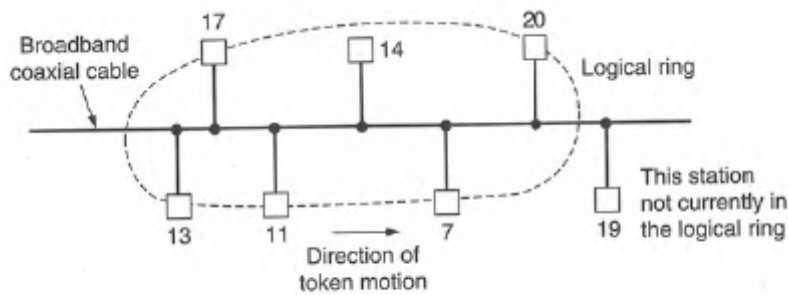


Fig. 4-25. A token bus.

Figure 4-25 of Tanenbaum illustrates a token bus network based on the IEEE 802.4 standard

In such a network, Patent Owner argues, there is no “third computer not already connected to said first computer” for responding to the claimed “connection port search message” (i.e., *who\_follows* in Rufino). PO Resp. 29–30, 32. Rather, Patent Owner argues, every station is already physically connected to every other station regardless of whether they are neighbors in the logical token ring. *Id.* at 30, 34. Patent Owner bases this argument on Tanenbaum’s description of the token bus network in Figure 4–25 that the physical bus is a broadcast medium and that in general “each station receives the frame, discarding those not addressed to it.” Ex. 2007, 288; PO Resp. 34; Ex. 2003 ¶ 106. On the other hand, Patent Owner argues, the only message sent over the logical token ring (i.e., the dotted line in Figure 4-25) is the “token frame specifically addressed to its logical neighbor in the ring.” PO Resp. 34 (quoting Ex. 2007, 288); Ex. 2003 ¶ 106. Consequently, Patent Owner argues, when “the current token holder receives a response from the successor of the failed station [in Rufino] it is receiving a response from a station to which it is already connected.” *Id.* (internal quotations omitted). We find this argument persuasive.

Significantly, Petitioner does not dispute Patent Owner’s description of the operation of the token bus network, based on Tanenbaum, including that transmitted frames are received by every computer connected to the bus. *See* Pet. Reply 17–18; Ex. 2003 ¶ 106 (“[A]ll other frames used in token bus network [are] sent either directly to another station or sent to a group of stations on the physical bus.”). Indeed, Petitioner’s declarant, Dr. Karger, admitted in cross-examination that all nodes on the bus are “directly connected” to each other because all nodes on a token bus network will “directly receive” a broadcast transmitted by one node on the bus. Ex. 2010, 63:24–64:5 (“The bus does allow any two nodes to communicate directly because the bus provides broadcast, which means that if one node transmits, then all nodes will directly receive the transmission. *And so, in that sense, I would probably characterize those nodes as being directly connected through the bus.*” (emphasis added)).

Petitioner does not provide a persuasive argument as to why the other computers, including the alleged third computer, are “not already connected” as the claim requires. In fact, Petitioner’s only argument in response to Patent Owner’s contention is that Patent Owner’s “application of the term ‘connected’ is inconsistent with [Patent Owner’s] own construction of the term, which relates to a *logical* connection that overlays an underlying network.” Pet. Reply 17. However, because we do not agree with Patent Owner’s proposed construction of connection or connected (*see supra* § II.B.4), Petitioner provides essentially no argument as to why the alleged third computer is not connected as depicted in Figure 4–25 shown above.

Rather, as discussed *supra*, the claims themselves set forth the requirements of a connection. In particular, a connection allows messages to

be sent between computers. *See* Tr. 17:20–22 (“So certainly the connection can be a logical connection. It can be a physical connection. The claim just says it’s a connection.”). Based on the evidence of record, including the undisputed description in Tanenbaum of a token bus, we determine that the responding computer (i.e., “third computer”) on the token bus in Rufino alone or in combination with the other references is “connected” within the meaning of the claims, and therefore does not satisfy the “not already connected” requirement of the third computer. For this reason, we conclude Petitioner has not proven by a preponderance of the evidence that claim 6 is unpatentable over the combination of Shoubridge, Denes, Rufino, and Todd.

*b. Alleged reasons to combine the references*

Petitioner contends that a person of ordinary skill would have been motivated to apply the messaging techniques disclosed in Rufino to coordinate the node removal operation disclosed in the Denes and Shoubridge combination. Pet. 18, 23, 34; *see also* Ex. 1003 ¶ 168 (“[I]t would have been obvious to use the technique of Rufino to identify a failed port . . . . Rufino discloses . . . that an attempted transmission can be used to identify a failed node in the network.”). Petitioner acknowledges that Rufino teaches messaging in the context of a 2-regular “token ring topology” only (Pet. 58 (citing Ex. 1003 ¶ 231)), but, citing Todd, Petitioner contends it would have been known to a person of ordinary skill to expand this token messaging technique to a 4-regular (i.e.,  $m = 4$ ) token grid topology (*id.*). Petitioner contends the proposed modification to Rufino to add additional connections could be done in a simple fashion to obtain the advantages of better transmission as taught by Todd. *Id.* at 58–59 (citing Ex. 1003 ¶¶ 233–234).

Patent Owner disputes this rationale for combining Shoubridge, Denes, Rufino, and Todd. *See* PO Resp. 43–50. In particular, Patent Owner argues that expanding Rufino from a 2-regular to a 4-regular topology, based on Todd, is “indefensible” because Todd is directed to overlapping token *rings* that are fundamentally incompatible with Rufino’s token *bus* network, which does not use the token bus failed node messaging protocol. *Id.* at 47. Relying on Dr. Goodrich, Patent Owner argues that “the ‘token ring’ referred to in Todd is the well-known ‘token ring network,’ standardized under IEEE 802.5, which is fundamentally different [from] Rufino’s well-known ‘token bus network,’ which is standardized under IEEE 802.4.” *Id.* at 47–48 (citing Ex. 2003 ¶¶ 148–150). Patent Owner argues that Petitioner does not address this difference, which is significant because failed nodes are handled completely differently, “with Todd’s technique not relying on messaging whatsoever.” *Id.* at 49–50 (citing Ex. 1019, 286 (“[O]ptical bypass switches are used to maintain ring integrity following a station power failure.”)); Ex. 2010, 75:9–18. Accordingly, Patent Owner argues, “Petitioner is simply incorrect to say that ‘Todd . . . shows that the modification to Rufino can be done ‘in a very simple fashion’ by overlapping token rings.” *Id.* at 49 (citing Pet. 60).

We agree that Petitioner has not provided a persuasive rationale for combining Rufino and Todd. Petitioner does not dispute that failed node messaging of Rufino is applicable to the IEEE 802.4 token bus protocol, not the overlapping IEEE 802.5 token ring networks in Todd.<sup>8</sup> *See* Pet. Reply

---

<sup>8</sup> Instead, Petitioner criticizes Dr. Goodrich for not “performing a complete analysis” and relying instead on the Tanenbaum reference to summarize the relevant details. Pet. Reply 20. We do not find this criticism persuasive

20–21. Nor does Petitioner dispute that token ring does not use any messaging to recover from failed nodes but instead uses physical switches. *See id.*; Ex. 1019, 286 (“[O]ptical bypass switches are used to maintain ring integrity in the event of a power failure.”). Indeed, as Petitioner’s declarant Dr. Karger acknowledged,

there are a number of different [failed node] recovery procedures that one could imagine. Rufino describes a particular recovery mechanism for the token-bus network. *Todd describes another recovery mechanism which involves sort of shortcutting a failed station in order to recover from that failure.*

Ex. 2010, 75:9–18 (emphasis added).

In its Reply, Petitioner argues Tanenbaum’s comment “that the 802.4 and 802.5 standards ‘use roughly similar technology and get roughly similar performance,’” supports its rationale for combining Rufino and Todd. Pet. Reply 20–21 (quoting Ex.1205, 4). In the first place, we find this observation to be high-level and insufficiently specific as to the relevant portions of the respective protocols. Moreover, Tanenbaum explains the significant differences between the two standards in regard to how it recovers from a failed node—the point at which Petitioner would combine Rufino and Todd. *Compare* Ex. 2007, 292 *with id.* at 298–299 (explaining that the “token ring protocol handles [ring] maintenance quite differently [than token bus]. Each token ring has a **monitor station** that oversees the ring.”).

Moreover, according to Tanenbaum, these differences result from

---

because it does not allege error in Dr. Goodrich’s analysis or Tanenbaum’s explanations as to the relevant portions of the token ring and token bus standards.

divergent views between the IEEE committees that designed the standards. Specifically, in contrast to the approach followed by the token ring committee (IEEE 802.5), the token bus (IEEE 802.4) committee “was scared to death of having any centralized component that could fail in some unexpected way” and, therefore, “designed a system in which the current token holder had special powers (e.g., soliciting bids to join the ring).” *Id.* at 299.

Accordingly, we determine that Petitioner’s rationale for combining Rufino and Todd—based on the assumption that expanding the messaging technique of Rufino to the token ring network of Todd could be done in a “very simple fashion” (Pet. 59–60)—is insufficiently supported. Instead, given the undisputed incompatibilities between token bus and token ring, this conclusory reasoning, which is not expanded upon by Dr. Karger (*see* Ex. 1003 ¶ 234), fails to explain sufficiently how the two protocols could have worked together let alone why a person of ordinary skill in the art would have been motivated to make the proposed modification. *See Broadcom Corp. v. Emulex Corp.*, 732 F.3d 1325, 1335 (Fed. Cir. 2013) (“An invention is not obvious just ‘because all of the elements that comprise the invention were known in the prior art;’ rather, a finding of obviousness at the time of invention requires a ‘plausible rational[e] as to why the prior art references would have worked together.’”).

Consequently, for the foregoing reasons, we are not persuaded Petitioner has met its burden of proving claim 6 unpatentable by a preponderance of the evidence.<sup>9</sup> Because dependent claims 7–10 depend

---

<sup>9</sup> In view of our determination that claim 6 has not been shown to be unpatentable over Shoubridge, Denes, Rufino, and Todd, it is unnecessary

from claim 6, Petitioner has not satisfied its burden with respect to these claims as well.

### III. CONCLUSION

We conclude Petitioner has not shown by a preponderance of the evidence that claims 6–10 of the '147 patent are unpatentable.

### IV. ORDER

In consideration of the foregoing, it is

ORDERED that claims 6–10 of the '147 patent have not been shown to be unpatentable; and

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

---

for us to consider Patent Owner's secondary consideration analysis. *See* PO Resp. 51–57.

IPR2016-00747  
Patent 6,732,147 B1

FOR PETITIONER:

Michael M. Murray  
Andrew R. Sommer  
Michael A. Tomasulo  
Gregg Duffey  
WINSTON & STRAWN LLP  
mmurray@winston.com  
asommer@winston.com  
mtomasulo@winston.com  
Gduffey@winston.com

FOR PATENT OWNER:

James Hannah  
Michael Lee  
Shannon Hedvat  
KRAMER LEVIN NAFTALIS & FRANKEL LLP  
jhannah@kramerlevin.com  
mhlee@kramerlevin.com  
shedvat@kramerlevin.com