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Paper 47
Entered: December 6, 2017

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC.,
Petitioner,

v.

WINDY CITY INNOVATIONS, LLC,
Patent Owner.

Case IPR2016-01157
Patent 8,407,356 B1

Before KARL D. EASTHOM, DAVID C. McKONE, and MELISSA A. HAAPALA, *Administrative Patent Judges*.

McKONE, *Administrative Patent Judge*.

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

I. INTRODUCTION

A. Background

Facebook, Inc. ("Petitioner") filed a Petition (Paper 1, "Pet.") to institute an *inter partes* review of claims 1–9, 12, 14–28, 31, and 33–37 ("the challenged claims") of U.S. Patent No. 8,407,356 B1 (Ex. 1001, "the '356 Patent"). Windy City Innovations, LLC ("Patent Owner") filed a Preliminary Response (Paper 6, "Prelim. Resp.").

Pursuant to 35 U.S.C. § 314, in our Institution Decision (Paper 7, "Dec."), we instituted this proceeding as to claims 1–9, 12, 14–28, 31, and 33–37.

Patent Owner filed a Patent Owner's Response (Paper 22, "PO Resp."), and Petitioner filed a Reply to the Patent Owner's Response (Paper 31, "Reply").

Petitioner relies on the Declarations of Tal Lavian, Ph.D. (Ex. 1002, "Lavian Decl."; Ex. 1021, "2nd Lavian Decl."). Patent Owner relies on the Declaration of Jaime G. Carbonell, Ph.D. (Ex. 2005, "Carbonell Decl.").

An oral argument was held on October 19, 2017 (Paper 46, "Tr.").

We have jurisdiction under 35 U.S.C. § 6. This Decision is a final written decision under 35 U.S.C. § 318(a) as to the patentability of claims 1–9, 12, 14–28, 31, and 33–37. Based on the record before us, Petitioner has proved, by a preponderance of the evidence, that claims 1–9, 12, 15–28, 31, and 34–37 of the '356 patent are unpatentable, but has not proved that claims 14 and 33 are unpatentable.

B. Related Matters

The parties indicate that the '356 patent has been asserted in *Windy City Innovations, LLC v. Microsoft Corp*., Civ. A. No. 15-cv-00103-GM (W.D.N.C.) (transferred to 16-cv-1729 (N.D. Cal.)), and *Windy City Innovations, LLC v. Facebook, Inc.*, Civ. A. No. 15-cv-00102-GM (W.D.N.C.) (transferred to 16-cv-1730 (N.D. Cal.)). Pet. 1; Paper 4, 1. The '356 patent was the subject of *inter partes* review petitions in IPR2016–01067. Paper 4, 1. The '356 patent also was the subject of IPR2017-00624, which Microsoft Corp. filed and sought to join with this proceeding prior to settling with Patent Owner. Patents related to the '356 patent are subjects of additional *inter partes* review petitions.

C. Asserted Prior Art References

Petitioner relies on the following prior art:

U.S. Patent No. 6,608,636 B1, issued Aug. 19, 2003, filed May 13, 1992 (Ex. 1003, "Roseman");

Published European Pat. App. No. 0 621 532 A1, published Oct. 26, 1994 (Ex. 1004, "Rissanen");

Ronald J. Vetter, *Videoconferencing on the Internet*, IEEE COMPUTER SOCIETY 77–79 (Jan. 1995) (Ex. 1005, "Vetter");

MARY ANN PIKE ET AL., USING MOSAIC (1994) (Ex. 1006, "Pike"); and

James Gosling, *Java Intermediate Bytecodes*, ACM SIGPLAN WORKSHOP ON INTERMEDIATE REPRESENTATIONS (IR '95), VOL. 30, NO. 3 ACM SIGPLAN NOTICES 111–18 (Mar. 1995) (Ex. 1007, "Gosling").

D. The Instituted Grounds

We instituted a trial on the following grounds of unpatentability (Dec. 27):

References	Basis	Claims Challenged
Roseman, Rissanen, and Vetter	§ 103(a)	1–5, 8, 9, 12, 14–16, 19–24, 27, 28, 31, 33–35, and 37
Roseman, Rissanen, Vetter, and Pike	§ 103(a)	6, 7, 17, 26, and 36
Roseman, Rissanen, Vetter, and Gosling	§ 103(a)	18 and 25

E. The '356 Patent

The '356 patent describes an Internet "chat room." According to the '356 patent, it was known to link computers together to form chat rooms in which users communicated by text, graphics, and multimedia, giving the example of the Internet service provider "America On Line." Ex. 1001, 1:46–52. The '356 patent acknowledges that chat rooms have been implemented on the Internet, albeit with "limited chat capability," but contends that the complex chat room communications capable with Internet service providers had not been developed on the Internet "at least in part because [the] Internet was structured for one-way communications analogous to electronic mail, rather than for real time group chat room communications" and because "there is no particular control over the platform that would be encountered on the Internet." *Id.* at 1:54–56, 1:60–62.

Figure 1, reproduced below, illustrates an embodiment of the invention:

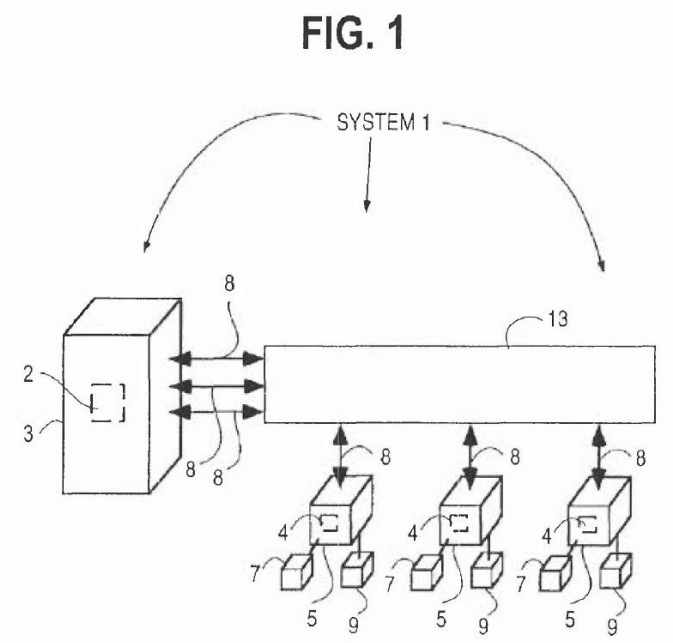

Figure 1 is a block diagram showing the components and data flow of a computerized human communication arbitrating and distributing system. *Id.* at 4:62–66. The system includes controller computer 3 in communication with several participator computers 5 (e.g., IBM-compatible personal computers) over connection 13 (e.g., an Internet connection or a World Wide Web connection). *Id.* at 4:67–5:20.

Controller computer 3 runs under the control of controller software 2, and the software arbitrates, in accordance with predefined rules (including user identities), which participator computers 5 can interact in a group through the controller computer, and directs real-time data to the members of the group. *Id.* at 5:21–27. The software uses "identity tokens," or pieces of information associated with user identity, in the arbitration. *Id.* at 8:9–12.

The tokens are stored in a memory in a control computer database along with personal information about the users. *Id.* at 8:12–17.

The arbitration can be used to control a user's ability to join or leave a group of participator computers, to moderate communications involving the group, and to see other users in the group. *Id.* at 8:24–37. Arbitration using tokens also can be used to perform censorship:

> Censorship, which broadly encompasses control of what is said in a group, is also arbitrated by means of the tokens. Censorship can control of access [sic] to system 1 by identity of the user, which is associated with the user's tokens. By checking the tokens, a user's access can be controlled per group, as well as in giving group priority, moderation privileges, etc.
>
> Censorship also can use the tokens for real time control of data (ascii, text, video, audio) from and to users, as well as control over multimedia URLs—quantity, type, and subject.

Id. at 8:39–47.

According to the specification, "[t]he present invention comprehends communicating all electrically communicable multimedia information as Message 8, by such means as pointers, for example, URLs. URLs can point to pre-stored audio and video communications, which the Controller Computer 3 can fetch and communicate to the Participator Computers 5." *Id.* at 5:38–43.

Figure 2, reproduced below, represents an overview of the communications described in the '356 patent.

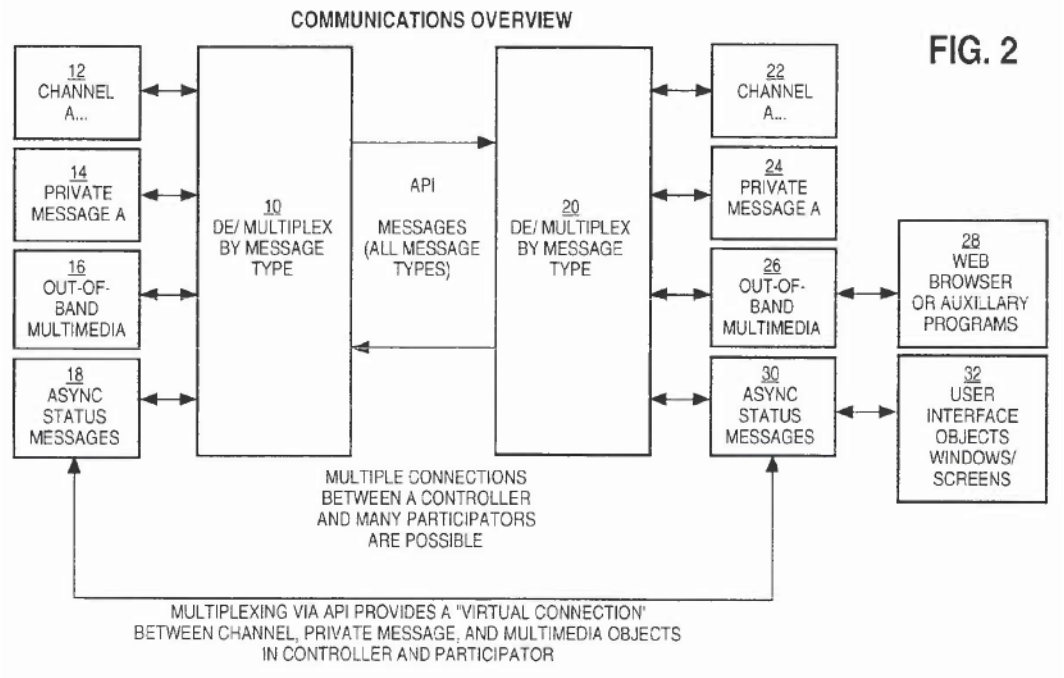

Figure 2 is a block diagram that provides a communications overview. *Id.* at 2:63–64. Blocks 10, 12, 14, 16, and 18 in Figure 2 illustrate operations under controller software 2, and Blocks 20, 22, 24, 26, and 30 illustrate operations under participator software 4. *Id.* at 5:45–54, 5:58–6:2. For example, Block 14 represents the handling of a private message. *Id.* at 5:50–51.

Block 10 and Block 20 illustrate software multiplexing and demultiplexing of API messages by message type on the controller computer and a participator computer, respectively. *Id.* at 5:46–48, 5:59–61.[1] Multiplexing and demultiplexing the API messages, according to the '356

[1] The '356 patent does not specifically state what the acronym "API" represents, but the parties essentially agree that API messages represent messages of different types as discussed further below. Ex. 1002 ¶ 33; Ex. 1010 ¶ 8 (Patent Owner's declarant asserting during prosecution that the '356 patent "specification . . . never uses the term 'application program interface'").

patent, creates a "virtual connection" between different functions on the controller computer (e.g., a private message) and participator computer such that each function does not need to handle its own connection separately. *See id.* at 6:3–9.

In particular, the '356 patent states "[d]e/multiplexing via API provides a 'virtual connection' between Channel, Private message, and Multimedia objects in the controller computer 3 and each participator computer 5." *Id.* at 6:3–5. In essence, the API multiplexing system routes messages together, and a demultiplexor at the participator computer separates them according to message type in accordance with a particular function associated with that message type. *See id.* at Fig. 2, 5:44–54, 6:3–5. As background prior art, the '356 patent states "corporations may link remote offices to have a conference by computer . . . . [with a] central computer . . . control[ling] the multiplexing of what appears as an electronic equivalent to a discussion involving many individuals," but "[m]ultiplexing in multimedia is more complex." *Id.* at 1:42–45.

Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A method of communicating content among users using of [sic] a computer system including a controller computer and a database which serves as a repository of tokens for other programs to access, thereby affording information to each of a plurality of participator computers which are otherwise independent of each other, the method comprising:
>
> authenticating a first user identity and a second user identity according to permissions retrieved from the repository of tokens of the database;

affording some of the information to a first of the participator computers via the Internet network, responsive to an authenticated first user identity;

affording some of the information to a second of the participator computers via the Internet network, responsive to an authenticated second user identity;

running controller software on the controller computer, in accordance with predefined rules, to direct arbitration of which ones of the participator computers interactively connect within a group of the participator computers;

providing an API on the controller computer, the API multiplexing and demultiplexing API messages by type, creating a virtual connection and providing the virtual connection between channels, private messages, and multimedia objects in the controller computer and the participator computers; and

communicating real-time messages within the group of the interactively connected said participator computers.

II. ANALYSIS

A. Claim Construction

We interpret claim terms in an unexpired patent using the broadest reasonable construction in light of the specification of the patent in which they appear. *See* 37 C.F.R. § 42.100(b); *Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2144–45 (2016). In applying a broadest reasonable construction, claim terms generally carry their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *See In re Translogic Tech., Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

1. Constructions in the Institution Decision

In the Institution Decision, we preliminarily construed the following terms (Dec. 7–9):

Claim Term	**Preliminary Construction**
"token"	"piece of information associated with user identity"
"channel"	"group of participator computers in active communication"
"censorship"	"control of what is said in a group"

Neither party challenges our construction of "channel," and we maintain that construction on the complete record. Patent Owner adopts our construction of "token" (which Petitioner initially proposed), PO Resp. 8, and challenges our construction of "censoring," *id.* at 13. Petitioner accepts our construction of "censoring" and presents arguments in favor of that construction. Reply 3. We maintain our construction of "token" on the complete record. We address the construction "censoring" below. The parties further dispute the meaning of "database," PO Resp. 8–12; Reply 3–7, and we construe that term below. We also construe "multiplexing and demultiplexing API messages by type" to resolve the parties' dispute with respect to this term.

2. "censorship"

Dependent claims 14 and 33 recite "censorship of the content"; dependent claims 15 and 34 recite "determines censorship." As noted above, we preliminarily construed "censorship" to mean "control of what is said in a group." Dec. 9–10. We further explained that Patent Owner had

not shown that "censorship" should be construed to exclude controlling user access rights or censorship of users. *Id.* at 10. We based our construction on the description of that term in the specification. *Id.* Specifically, the specification of the '356 patent describes censorship as follows:

> Censorship, which *broadly encompasses control of what is said in a group*, is also arbitrated by means of the tokens. Censorship can control of access [sic] to system 1 by identity of the user, which is associated with the user's tokens. By checking the tokens, a user's access can be controlled per group, as well as in giving group priority, moderation privileges, etc.
>
> Censorship also can use the tokens for real time control of data (ascii, text, video, audio) from and to users, as well as control over multimedia URLs—quantity, type, and subject.

Ex. 1001, 8:39–47 (emphasis added). Here, the specification describes "censorship" as "broadly encompass[ing] control of what is said in a group" and includes an example in which an action is taken on a user, rather than the data itself.

Patent Owner argues that censorship should be construed to mean "examine in order to suppress or delete anything considered objectionable." PO Resp. 13. According to Patent Owner, "[i]n order to control what is said in a group, it is necessary to first know what is said (or proposed to be said)." *Id.* Patent Owner argues that this is consistent with the meaning given to "censor" and "censorship" in dictionaries, including "to examine in order to suppress or delete anything considered objectionable" (Webster's Collegiate Dictionary (Ex. 2002)) and "[t]he action of preventing material that a party considers objectionable from circulating within a system of communication over which that party has some power" (Microsoft Press Computer Dictionary (Ex. 2003)).

We are not persuaded by Patent Owner's arguments. The claim language itself does not support a construction of "censorship" limited to analysis of the content of data and suppression based on that content. Claim 15, for example, recites only that "the controller computer *determines censorship*," and does not recite that censoring is based on any analysis of the content of the message to determine whether it is objectionable. To the extent Patent Owner's dictionary definitions suggest a narrower meaning, extrinsic evidence such as dictionary definitions "may be used only to help the court come to the proper understanding of the claims; it may not be used to vary or contradict the claim language." *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996); *accord Phillips v. AWH Corp.*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc) ("[W]hile extrinsic evidence can shed useful light on the relevant art, we have explained that it is less significant than the intrinsic record in determining the legally operative meaning of claim language." (internal citations and quotation marks omitted)).

On the complete record, in accordance with the specification's definition, "censorship" means "control of what is said in a group." "Censorship," by itself, is not limited to examining data to determine whether it is objectionable.

As noted above, claims 14 and 33 recite "determin[es/ing] censorship of the content." Here, the broad term "censorship" is modified by the term "of the content." This is consistent with the example in the specification, cited above, that "[c]ensorship also can use the tokens for real time control of data (ascii, text, video, audio) from and to users, as well as control over multimedia URLs—quantity, type, and subject." Ex. 1001, 8:45–47. In this

example, the censorship is based on the characteristics of the data itself, including determining what type of data it is (e.g., text or video) and does not simply involve blocking all communications from or to a particular user. Moreover, claims 2 and 20 depend from claims 1 and 19, respectively, and recite "wherein the communicating content includes communicating at least one of sound, video, pointer and multimedia content." This further shows that content refers to the type of data, so that censorship of content is directed to censoring content based on characteristics such as the type of data. Thus, "determining censorship of the content" is narrower than censorship generally, and means "determining whether to communicate content based on characteristics of the content."

3. "database"

Neither party proposed construing "database" prior to institution. Nevertheless, in related proceedings, for similar claims of related patents, we construed "database" to mean "a collection of logically related data." *See, e.g.*, Case IPR2016-01158, Paper 7, 9–10 (for claims of U.S. Patent No. 8,473,552 B1); Case IPR2016-01159, Paper 7, 9–10 (for claims of U.S. Patent No. 8,694,657 B1). Patent Owner challenges our preliminary construction of "database" in those proceedings and echoes its arguments in this proceeding. Specifically, Patent Owner contends that "a database should be construed as 'a collection of logically related data which is stored with persistence and associated tools for interacting with the data such as a DBMS.'" PO Resp. 12. In essence, Patent Owner urges a construction that differs from our preliminary construction in related matters in two regards: (1) Patent Owner contends that a database is a collection of logically related

data "which is stored with persistence"; and (2) Patent Owner contends that a database includes "associated tools for interacting with the data such as a DBMS." PO Resp. 12.

Patent Owner's primary argument in favor of construing "database" to require these limitations is that it filed, in a related application before the Patent Office, an information disclosure statement (IDS) that supports its construction. *Id.* at 9–10 (citing Ex. 2008). The IDS was submitted to the Patent Office in pending application 14/246,965 on January 1, 2017, after Petitioner filed the Petition and shortly after we instituted this proceeding and preliminarily rejected Patent Owner's claim construction arguments in related proceedings. In the IDS, Patent Owner argued, *inter alia*, that "attention is respectfully drawn to the defendants' contentions[2] of invalidity in view of the database and 'other programs' limitations that are common to all claims" and that "[b]ecause the database affords information to other programs and computers, it must store the data, such as the tokens, with persistence, such that tools can interact with the data such as a DBMS when providing the data to the participator computers of the authenticated users." Ex. 2008, 2. Patent Owner argues that we must accept its construction pursuant to *Verizon Services Corp. v. Vonage Holdings Corp.*, 503 F.3d 1295, 1306 (Fed. Cir. 2007), which held that, in some circumstances, a statement made by a patentee in the prosecution history of a related application can operate as a disclaimer, even if the disclaimer occurred after the patent-in-suit had issued. PO Resp. 10.

[2] This appears to be a reference to invalidity contentions filed in a related district court proceeding.

Although we doubt that the Federal Circuit intended that an IDS in a related application should be a vehicle for overturning a disadvantageous claim construction in an adversarial proceeding,[3] we need not reach that issue. As the Federal Circuit also held, "[t]o operate as a disclaimer, the statement in the prosecution history must be clear and unambiguous, and constitute a clear disavowal of claim scope." *Verizon*, 503 F.3d at 1306. That is not the case here. The statements in Patent Owner's IDS are not in response to any rejection by the Examiner, do not accompany any amendments, and are not directed to any particular claims, other than a general statement that the statements apply to "all claims."[4] Ex. 2008, 2.

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[3] *See Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 1270 (Fed. Cir. 1986) ("A citation may be made at 'any time' either during prosecution or, as here, after the patent has issued. If made during prosecution, it is clear that the statements may be considered for claim interpretation purposes, just as any other document submitted during prosecution. If submitted after issuance, the answer, again, is it may be considered. To say that it *may* be considered is not to say what *weight* statements in the Citation are to be accorded. For example, a Citation filed during litigation might very well contain merely self-serving statements which likely would be accorded no more weight than testimony of an interested witness or argument of counsel. Issues of evidentiary weight are resolved on the circumstances of each case."); *Phillips*, 415 F.3d at 1317 ("Like the specification, *the prosecution history provides evidence of how the PTO and the inventor understood the patent*. . . . Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." (emphasis added)).

[4] Adding to the ambiguity, it is not clear whether the IDS's reference to "all claims" refers to the claims in the pending application or the claims discussed in the defendants' contentions of invalidity to which the sentence is directed.

See Phillips, 415 F.3d at 1317 ("Like the specification, *the prosecution history provides evidence of how the PTO and the inventor understood the patent*. . . . Yet because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes." (emphasis added)).

Although Patent Owner argues that the IDS "supports the construction that a database is limited" in the manner that it argues, Patent Owner does not contend that the IDS constitutes a disclaimer of any subject matter. PO Resp. 9–10. We find that the IDS does not contain a "'clear and unmistakable' disclaimer that would have been evident to one skilled in the art." *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1064 (Fed. Cir. 2016). Therefore, we are not persuaded that we should apply prosecution history disclaimer to limit the scope of the term "database."

Patent Owner also cites to the testimony of Dr. Carbonell that "[t]wo hallmarks of a database are (1) persistence of the data, and (2) interactivity with the data via a database management system (DBMS)." *Id.* (citing Ex. 2005 ¶ 33). In support, Patent Owner and Dr. Carbonell cite to the Macmillan Encyclopedia of Computers (Ex. 2004). PO Resp. 10–11; Carbonell Decl. ¶ 33. In the portion included in Exhibit 2004, The Macmillan Encyclopedia states that "[a] database system is a collection of related records stored in a manner that makes the storage and retrieval of the data very efficient. The four well-known data models for databases are the hierarchical, network, relational, and object-oriented models." Ex. 2004, 230. This definition does not require persistence and Patent Owner does not explain why persistence should be inferred from this definition. Dr. Lavian,

in turn, cites to a 1991 textbook, which defines "database" as "a collection of interrelated data," a definition that does not require "persistence." Ex. 1021 ¶ 12 (quoting Ex. 1017 ("Korth"), 5). Moreover, we observe that Patent Owner provides no boundaries for "stored with persistence" to meaningfully limit the term. For example, all data accessed and stored by a program while the program is executing has some level of "persistence."

As to a DBMS, Macmillan explains:

> A database management system (DBMS) is a software package. Its main functions are (1) to provide the facility to set up the database, (2) to retrieve and store source data (actual data in the database), (3) to retrieve and store the data about the structure of the database (data dictionary), (4) to provide the facilities to enforce security rules, (5) to back up the database, and (6) to control the concurrent transactions so that one user's environment is protected from others.

Ex. 2004, 231. Patent Owner characterizes the DBMS as "another criteria of a database" that provides interactive querying capability not present in "[s]tandard storage" in temporary or permanent memory. PO Resp. 11. Dr. Carbonell repeats Patent Owner's arguments without citation to evidence. Ex. 2005 ¶¶ 33–36. Nevertheless, we read Macmillan to describe a DBMS as software that works with a database, rather than a part of a database or a component that necessarily accompanies a database. Dr. Carbonell's testimony, which does not identify its bases, adds little to Macmillan. *See* 37 C.F.R. § 42.65(a) ("Expert testimony that does not disclose the underlying facts or data on which the opinion is based is entitled to little or no weight.").

Patent Owner also argues that the disclosure of the '356 patent imposes "persistence" and DBMS limitations on the claimed database

because it describes the database as storing security information such as tokens for other programs to access. PO Resp. 12. Patent Owner does not provide a citation to the '356 patent in support of its argument. Nevertheless, Patent Owner argues, again without citation, that "[o]ne of ordinary skill in the art would have expected that this type of security feature would persist in a location other than in program memory so that other user programs could access the information." *Id.* Finally, Patent Owner argues that the '356 patent describes tokens stored in hierarchies, which, according to Patent Owner, "are typical of database storage organization, and natural schema when storing and managing access to diverse information." *Id.* None of these arguments supports reading persistence or a DBMS into the term "database." We note also that the other claim language, "serves as a repository of tokens for other programs to access," is a requirement we evaluate separately and do not read into the term "database."

The specification describes a database consistently with the Macmillan and Korth definitions, explaining that tokens are "pieces of information associated with user identity," that tokens are "stored in memory 11 in a control computer database, along with personal information about the user," and that "[i]n the database, the storage of tokens can be by user, group, and content." Ex. 1001, 8:9–21. The specification does not require a DBMS (or similar software) or impose a persistence requirement.

On the complete record, we construe database to mean "a collection of logically related data." This is the construction most consistent with both the intrinsic evidence and dictionary definitions. However, we note that Petitioner contends, and we find, that the prior art shows a database with

persistence and associated tools for interacting with the stored data, as explained below.

4. "multiplexing and demultiplexing API messages by type"

Claim 1 recites "providing an API on the controller computer, the API multiplexing and demultiplexing API messages by type." Petitioner contends that the Background of the Invention section of the '356 patent describes "multiplexing" as transporting messages from different messaging technologies (e.g., email, conferencing, and chat messages) using a shared communications pathway. Pet. 8–9 (citing Ex. 1001, 1:34–52). Petitioner further points to Figure 2 (reproduced above) and its corresponding description, as supporting this framework. *Id.* at 11–12 (citing Ex. 1001, 5:45–48). Petitioner further argues that "'demultiplexing' would be understood as the reverse of multiplexing, i.e. separating an individual message from the combined signal carried by the communications pathway to deliver it to the intended recipient." Pet. 9.

Describing Figure 2, as it pertains to the controller computer, the specification explains:

> Beginning with the Controller Computer Software 2, reference is made to Block 10, which illustrates demultiplexing and multiplexing operations carried out by message type on API messages of all types. Block 10 links to Block 12, which is illustrative of channel A . . . . Block 10 also links to Block 14, which illustrates handling private message A. Block 10 also links to Block 16, illustrative of handling out-of-band media. Block 10 additionally links to Block 18, which illustrates asynchronous status messages.

Ex. 1001, 5:45–54 (ellipses in original). As Petitioner points out (Pet. 12), the specification further describes demultiplexing by message type:

> From a message that is demultiplexed by message type, there are six possibilities: ERROR MESSAGE, MESSAGE, STATUS, JOINCHANNEL, LEAVE CHANNEL, AND MODMSG. ERROR MESSAGE is communicated to block 76, where the error message is displayed to the transcript in the transcript area of Block 80. MESSAGE is communicated to Block 78 where the message is immediately added to the transcript in transcript area 78. . . .

Id. at 7:4–24. We agree that the specification describes multiplexing as combining and transporting different types of messages over the same connection and demultiplexing as separating an individual message from the combined signal carried by the communications pathway to deliver it to a recipient based on the type of the message.

From the description in the specification, Petitioner concludes that "'demultiplexing' simply refers to routing a received API message to the correct software functionality based on the type of message." Pet. 14 (citing Ex. 1001, 7:11–12, 7:30–32). As explained above, the specification supports this conclusion, with the understanding that demultiplexing includes separating the received API messages from a combined signal.

As to "multiplexing," however, Petitioner proposes a construction inconsistent with its characterization of the specification, detailed above. Specifically, Petitioner argues that "'multiplexing' simply involves communicating an 'API message' to the appropriate software based on the type of the message." Pet. 13. Despite arguing (correctly) that demultiplexing is essentially the reverse of multiplexing, Petitioner proposes constructions of multiplexing and demultiplexing that are nearly identical in substance, rather than one being the reverse of the other. Although Patent Owner does not propose a construction of this term, Patent Owner does

observe that Petitioner uses the term "multiplexing" in a way that is the same as demultiplexing. PO Resp. 31–32. Under its construction of "multiplexing," Petitioner concludes that "providing an API on the controller computer, the API multiplexing and demultiplexing API messages by type," should be construed to mean "providing software functionality on the controller computer for sending and receiving messages of different types and communicating each message to software functionality based on the message type." *Id.* at 15. Petitioner's combined construction does not account for two operations, with one being the reverse of the other.

Petitioner finds support for its construction of "multiplexing" in the specification's description of Figure 3 (Ex. 1001, 6:12–15, 25–40). Specifically, Petitioner argues that the specification describes Block 10, labeled "MULTIPLEXING OF MESSAGE TYPE," as evaluating a type of message and routing the message to an appropriate software functionality. Pet. 13. Petitioner mischaracterizes Figure 3. Figure 3 is a dependency diagram showing the relationships among various functions in a system, not a flow chart showing the actual flow of data through the system. Ex. 1001, 6:10–12. Thus, Figure 3 does not show a multiplexing block or module splitting data from a common connection and distributing it to multiple other modules according to data type (which would be demultiplexing). As explained above, Figure 2 shows multiplexing as combining multiple messages of different types for transmission rather than splitting a transmission apart and routing individual messages to appropriate software functionality.

In light of the specification, "multiplexing . . . API messages by type" means "combining and transporting different types of messages over the

same connection" and "demultiplexing API messages by type" means "routing received API messages to the correct software functionalities based on the types of messages."

B. Asserted Grounds of Unpatentability

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the claimed subject matter and the prior art are "such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." We resolve the question of obviousness on the basis of underlying factual determinations, including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of skill in the art; and (4) objective evidence of nonobviousness, i.e., secondary considerations.[5] *See Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

In an obviousness analysis, some reason must be shown as to why a person of ordinary skill would have combined or modified the prior art to achieve the patented invention. *See Innogenetics, N.V. v. Abbott Labs.*, 512 F.3d 1363, 1374 (Fed. Cir. 2008). A reason to combine or modify the prior art may be found explicitly or implicitly in market forces; design incentives; the "interrelated teachings of multiple patents"; "any need or problem known in the field of endeavor at the time of invention and addressed by the patent"; and the background knowledge, creativity, and common sense of

[5] The record does not include arguments or evidence regarding objective indicia of nonobviousness.

the person of ordinary skill. *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328–29 (Fed. Cir. 2009) (quoting *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418–21 (2007)).

1. Level of Ordinary Skill

Neither party proposes a level of ordinary skill in the art. Nevertheless, both parties' experts testify to similar levels of skill. Specifically, Dr. Lavian testifies that a skilled artisan "would possess at least a bachelor's degree in electrical engineering or computer science (or equivalent degree or experience) with practical experience or coursework in the design or development of systems for network-based communication between computer systems." Ex. 1002 ¶ 13. For his part, Dr. Carbonell testifies that a skilled artisan "would have had a bachelor's degree in computer science (or a related field) and at least one year of work experience in programming in computer communication methods" and notes that his "opinions herein would not change even if the person having ordinary skill in the art were to be found to have the level of skill proposed by Dr. Lavian." Ex. 2005 ¶ 18. We adopt Dr. Lavian's proposal, as it is consistent with the level of skill reflected in the prior art of record. Nevertheless, we discern no material difference between his proposal and that of Dr. Carbonell. Thus, our findings and conclusions would be the same under either proposal.

2. Scope and Content of the Prior Art

Petitioner contends that the challenged claims would have been obvious over Roseman, alone or in combination with Rissanen, Vetter, Pike, and Gosling. Pet. 16.

a. Overview of Roseman

Roseman describes a system for multimedia conferencing, in which parties are linked by both video and audio media. Ex. 1003, Abstract. In Roseman, a conference is represented visually as a common virtual conference table, in which each participant can place a document onto the table electronically, manipulate and write on the document, write on a virtual notepad, and move a pointer to draw other users' attention. *Id.* at 2:38–45, 7:55–8:37. Participants can see the events as they occur. *Id.* at 2:46–47. Figure 9, reproduced below, illustrates an example conference room:

FIG. 9

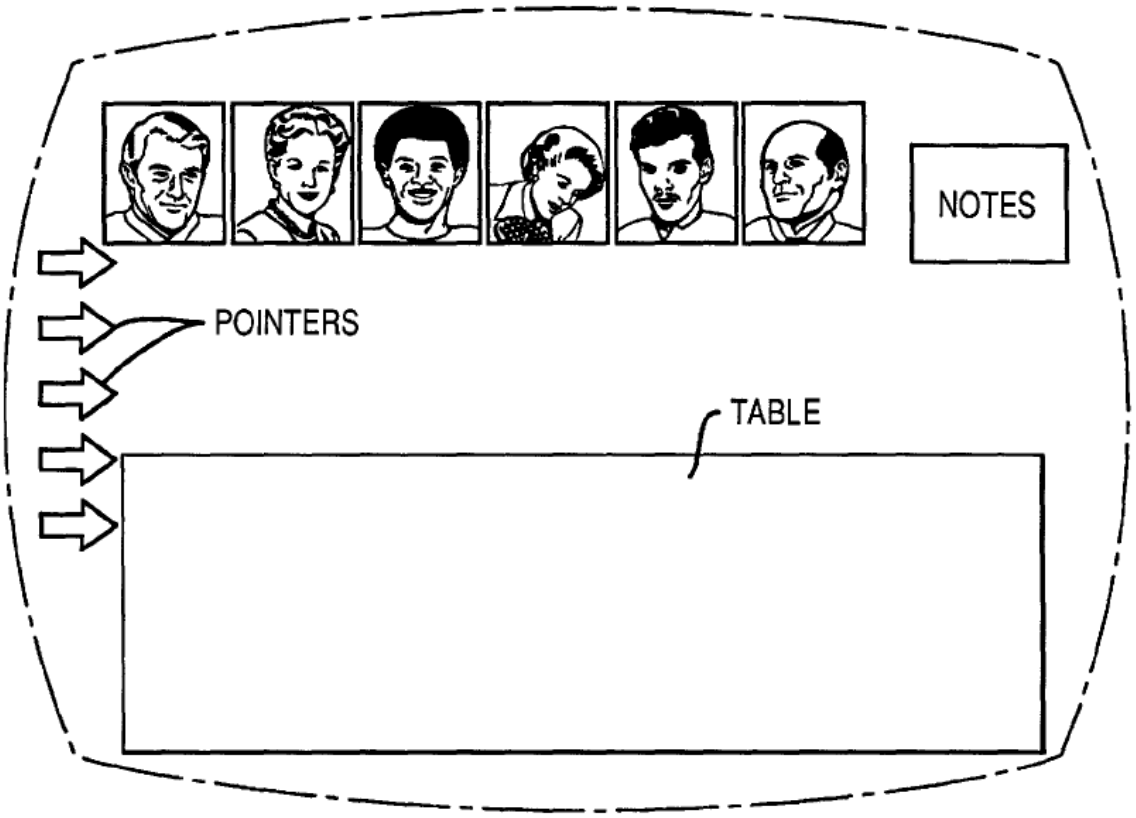

Figure 9 is a picture of a video screen that is generated by a host computer and distributed to all participants in a conference. *Id.* at 2:16–18.

The parties operate their own local computers (which include video cameras and speaker-type telephones) and, when a conference is established, connect to a host computer via commercially available local area networks ("LANs") and wide area networks ("WANs"). *Id.* at 1:34–41. In the conference, the host computer generates a common video screen (e.g., Figure 9, reproduced above) displayed at each of the local computers, and the parties send information, such as drawings, to be displayed on the common screen. *Id.* at 1:42–46. The telephones and video cameras allow the parties to see and speak with each other. *Id.* at 1:47–49.

Roseman includes a pseudo code appendix that details how its features are implemented. *Id.* at 12:66–13:2. According to the pseudo code, a participant interacts with the conference table, for example, by dragging an icon onto the table, which causes a data file to be transmitted to the host. *Id.* at 14:53–55. The host then transmits the icon to the table of each participant. *Id.* at 14:56–57. If another participant activates the icon, the host sends the open file to the tables of all participants. *Id.* at 14:58–61. If the participant drags the icon from the table to his own screen and activates the icon on his screen, the data file is presented to the participant. *Id.* at 14:62–66.

Roseman describes additional features, such as a party's ability to "whisper" to another party without being heard by others in the conference room, and the ability to "pass notes" by dragging a note to the picture of another party, while the other parties are unaware of the note. *Id.* at 9:16–31. Each room may also have "doors" to committee rooms or child-rooms. A child-room is created in the same way as a parent room and is dependent upon the parent room for access and existence. *Id.* at 10:18–23.

A meeting requester creates a conference by selecting the participants, the attributes of the virtual conference room (e.g., virtual equipment and room décor), and the rules of the conference (e.g., whether the requester has absolute control over voice and message interaction of the parties). *Id.* at 3:22–56. According to Roseman, "[t]he conference room itself is actually a combination of stored data and computer programs," the stored data can include conference proceedings, and "both the conference room and the proceedings of the conference have persistence in time." *Id.* at 12:16–25.

The meeting requester specifies a level for each invitation and compiles an invitation list. *Id.* at 9:34–36. Invitations include "keys" specifying the level, e.g., whether the invitation is for the invitee only or can be passed to a delegate or to anyone. *Id.* at 9:35–48. For example, "Level 1 keys may not be passed to any other person and may not be copied" while "Level 2 keys may be passed to exactly one other person and may not be copied." *Id.* at 9:42–45. According to Roseman, "[t]he meeting room 'knows' about each key and its invitation level. Persons with improper keys are not admitted to the room." *Id.* at 9:49–51. A key is distributed electronically as an object attached to the invitation. *Id.* at 9:54–55. To attend a meeting, a party walks a virtual "hallway" to the meeting room and opens the meeting room door by dropping the key onto a virtual "door lock." *Id.* at 10:30–32, 10:61–65. Moreover, the host "can automatically prevent filibustering" by "monitor[ing] the speech of each person, and plac[ing] a limit on the total time allowed to each person." *Id.* at 12:29–38.

b. Overview of Rissanen

Rissanen describes a system and method for validation of spoken passwords. Ex. 1004, 2:17–21. Rissanen's Background of the Invention discusses systems in which "business computer systems are arranged to initially record and store passwords assigned to users," a user is prompted for entry of a password, and "the system compares the keyboard entered password with the stored passwords and enables the user to access the system when the entered password matches the previously stored password." *Id.* at 1:21–28. In Rissanen's proposed solution, "[u]sers are initially entered into a password database stored in the computer system by assigning each

user an account code and a password, such as consisting of a number of numerical digits." *Id.* at 2:26–29.

Petitioner makes clear that "[a]lthough Rissanen also describes using spoken voice passwords, this Petition cites it for its more pedestrian teachings relating to database storage of passwords of any form." Pet. 20.

c. Overview of Vetter

Vetter is an IEEE Computer Society Magazine article discussing available tools for conducting teleconferencing over the Internet. According to Vetter, "[v]ideoconferences are becoming increasingly frequent on the Internet and are generating much research interest." Ex. 1005, 77. Vetter states that "the emerging multicast backbone (or MBone) can efficiently send traffic from a single source over the network to multiple recipients," and, "[a]t the same time, many workstations attached to the Internet are being equipped with video capture and sound cards to send and receive video and audio data streams." *Id.* Vetter concludes that "[t]he price/ performance of these hardware devices has finally reached a level that makes wide-scale deployment possible, which is perhaps the most important factor in the recent growth of videoconferencing applications." *Id.*

Vetter also describes challenges that faced implementation of audio, graphic, and video tools on the Internet, including "disturbing feedback when the microphones at multiple sites were left 'open' during a discussion," taking too much time to broadcast a simple graphic image to multiple participants when using "Whiteboard tools" (collaborative software tools that support a shared desktop whiteboard among a group of distributed users on the Internet), and use of video during a classroom presentation that

caused the workstations in the classroom lab to lock up. *Id.* at 78–79. Vetter also notes that the physical distance between two points on the Internet can be different from the electronic distance between those points. *Id.* at 79.

Vetter discusses in particular a CU-SeeMe platform from Cornell University that supported video and audio conferencing over the Internet, and a CU-SeeMe Reflector that allowed multiparty conferencing with CU-SeeMe. *Id.* at 78.

d. Overview of Pike

Pike is a reference and guide book for using the Web browser Mosaic. Ex. 1006, 2. Petitioner cites to Pike's discussion of URLs and hyperlinks. According to Pike, URLs were developed as a standard way of referencing items on the World Wide Web. *Id.* at 38. "A *URL* is a complete description of an item, containing the location of the item that you want to retrieve. The location of the item can range from a file on your local disk to a file on an Internet site halfway around the world." *Id.*

e. Overview of Gosling

Gosling is a paper describing various aspects of the Java programming language. Ex. 1007, 111. According to Gosling, programming in Java has the benefit of portability such that Java programs "can execute on any kind of CPU." *Id.* at 115.

3. Claim 1, Differences Between the Claimed Subject Matter and the Prior Art, and Reasons to Modify or Combine

Petitioner contends that Roseman teaches each limitation of claim 1, but cites the remaining references for the following, should we determine that Roseman lacks such a teaching:

Rissanen for a teaching that tokens could have been stored in a database;

Vetter for a teaching that Roseman's communications could have been over the Internet;

Pike for a teaching of URLs; and

Gosling for a teaching of a JAVA application.

Pet. 19–23.

a. "A method of communicating content among users using of [sic] a computer system including a controller computer and a database which serves as a repository of tokens for other programs to access, thereby affording information to each of a plurality of participator computers which are otherwise independent of each other"

Petitioner contends that Roseman's host computer is a controller computer. Pet. 24–25. Petitioner identifies Roseman's local computers as independent participator computers and argues that Roseman's various ways of communicating information (placing documents on a virtual table, shared notes, whisper conversations) are examples of affording information to those participator computers. Pet. 31–33. As detailed above, Roseman describes a system in which individual computers are connected to a central host computer via a combination of LANs and WANs. Ex. 1003, 3:14–19.

According to Roseman, "[t]he host controls many of the events occurring during the conference, as well as those occurring both during initiation of the conference and after termination of the proceedings." *Id.* at 1:50–52. We find that Roseman's host computer is a "controller computer," that Roseman's local computers are "participator computers," and that Roseman's various ways of communicating information from the host to the local computers are examples of "affording information to each of a plurality of participator computers which are otherwise independent of each other," as recited in claim 1.[6]

The parties dispute whether Roseman describes "a database which serves as a repository of tokens for other programs to access." First, Petitioner contends that Roseman's "keys" are tokens. Pet. 25–26. As explained above, the parties agree that a "token" is "a piece of information associated with user identity." As also explained above, Roseman describes that an invitor, in setting up a meeting, creates an invitation that includes a key that conforms to an invitation level. Ex. 1003, 9:34–48. A key "is an electronic object attached to the invitation." *Id.* at 9:54–55. The "level" of a key determines who can use it. *Id.* at 9:34–41. For example, "Level 1 keys may not be passed to any other person and may not be copied." *Id.* at 9:42–44. According to Roseman, "[t]o open a door with a key, the user drops the key onto the door lock. If the key is valid and the user has the authority to use the key, the door opens and the user is admitted to the room." *Id.* at

[6] Patent Owner argues that "Petitioner does not address the issue that the **database** affords information to each of a plurality of computers." PO Resp. 21. Claim 1, however, does not recite that the database affords information to the plurality of computers.

10:61–64. Petitioner argues that this evidence shows that Roseman's keys are "pieces of information associated with a user identity," and thus, are "tokens." Pet. 26.

Patent Owner argues that Roseman's keys are not tokens because they are associated only with conference rooms, rather than user identities. PO Resp. 17. Patent Owner points to Roseman's Figure 8, which shows a key associated with "CONFERENCE ROOM 17L (DATE, TIME)." *Id.* In describing Figure 8, however, Roseman explains "the key is, essentially, a block of data, or a code," that can be used if the Invitee may send a delegate to give the Absentee-Invitee a "key," which enables access to the meeting. Ex. 1003, 6:54–61. "The Requester can leave the key in his local computer, in the form of an icon residing on the display, as shown in FIG. 8. Anyone entering the office can use the key." Ex. 1003, 6:60–63. In this example, the key can be used only with a particular user's computer. Figure 8 also shows the "key" icon contained within a "vault" icon. *Id.* at 6:64–65. In this example,

> a user must use a "combination" to the "vault" to obtain the "key." In this latter example, the [] "combination" (ie, a pass-code) is obtained from the Absentee-Invitee in some appropriate way. At conference time, the Delegate opens the "vault," obtains the "key," and enters the conference room, by using the key.

Id. at 6:65–7:3. Patent Owner argues that Roseman's keys are "transferable to anyone—like a key to a door lock." PO Resp. 17. Patent Owner contends that Roseman teaches away from keys being associated with a specific user through its description that "***[k]eys may be copied and redistributed, if permitted***, or sent to another individual, if permitted." *Id.* at 17–18 (quoting Ex. 1003, 9:55–57) (emphasis by Patent Owner).

Patent Owner's arguments are not persuasive. Roseman describes keys that are transferable (Level 2 and 3 keys) and keys that are not transferable (Level 1 keys). Ex. 1003, 9:42–48. Petitioner's contentions (Pet. 26) are directed to Level 1 keys, which "may not be passed to any other person and may not be copied." *Id.* at 9:43–44. We find that keys that may not be passed to any other person are keys associated with that person. Figure 8 of Roseman is consistent with this because it describes passing a key to an "Absentee-Invitee" when the Invitee sends a delegate, i.e., a Level 2 key.

As to Level 1 keys, Patent Owner argues that a key is merely an attachment to an invitation, which "offers the only suggestion of an association with specific invitee." PO Resp. 18. Dr. Carbonell testifies (without identifying a basis) that Roseman's system could prevent the transfer of a key using a "no-transfer or no-duplication policy of such a key to insure that [it] always stays in the possession of the first user," by making transferability an attribute of the key and having the system simply assume, without recording transfers, that a user in possession of a key is authorized to use it. Ex. 2005 ¶ 31. As Petitioner argues, however, the claim construction to which Patent Owner agreed does not require an association between a key and a user to be implemented in a certain way. Reply 15–16. Even if Dr. Carbonell is correct as to how Roseman's keys would be implemented, such a non-transferable key would still be associated with the person who is prevented from transferring it.

Petitioner further argues that Roseman discloses storing keys in "a database which serves as a repository of tokens," as recited in claim 1, because a meeting room that is accessed by a key "'knows' about each key

and its invitation level." Pet. 27 (quoting Ex. 1003, 9:49–51). According to Petitioner, a copy of each key must be stored on the host computer for the meeting room to "know" about each key. *Id.* at 27. Petitioner argues that a skilled artisan would have understood the claimed database to be a stored collection of tokens. *Id.* at 27–28. Roseman does not expressly describe storing tokens in a database. Thus, we understand Petitioner to argue that tokens necessarily are stored in a database in light of Petitioner's cited disclosure—in other words, that a database is inherent in Roseman.

Patent Owner, relying on Dr. Carbonell's testimony, argues that a meeting room's knowledge of a key could be implemented using a hash function, which would not have required storage of the key in a database. PO Resp. 20–21 (citing Ex. 2005 ¶ 40). Petitioner characterizes Patent Owner's argument as "based on pure speculation and conjecture" and inconsistent with Roseman's disclosure. Reply 11–12. Nevertheless, we view both parties' respective theories of Roseman's implementation as speculation. Because Petitioner's position is speculative, it is insufficient to show that a database is inherent in Roseman.[7]

In the alternative, Petitioner argues that Rissanen teaches storing user authentication information, such as user identity information and passwords,

[7] Patent Owner also argues that Roseman does not suggest storing keys in a manner that is persistent and does not disclose tools such as a DBMS. PO Resp. 21–22. Roseman does teach that the data associated with its conference rooms are stored in a manner that is persistent, Ex. 1003, 12:16–28, and this at least suggests that keys also would be stored in such a manner. As to a DBMS, we explain above that the construction of "database" does not require this feature. Nevertheless, as explained below, Rissanen teaches a database even under Patent Owner's proposed construction.

in a database, and that such teaching would have been applicable to the keys of Roseman. Pet. 28–29. Petitioner argues that Roseman's keys are analogous to user identity and passwords. *Id.* According to Petitioner and its expert, Roseman's key verification step might not function properly if the keys are not stored in a database. *Id.* at 29 (citing Ex. 1002 ¶ 67). Petitioner further argues that storing keys in a database is one of a finite number of known solutions for verifying whether a previously issued key matches to a key later presented by a user to access a conference room. *Id.* at 29–30 (citing Ex. 1002 ¶¶ 67–68).

Patent Owner admits that "[Rissanen] does disclose a database," but argues that its database is used in a different type of system. PO Resp. 22. Thus, Patent Owner does not contest that Rissanen's database stores user identities and passwords in a persistent manner and is used in conjunction with tools such as a DBMS. For Petitioner, Dr. Lavian testifies that "Rissanen clearly discloses a relational database whose data is stored persistently and includes tools for interacting with the data such as a DBMS." Ex. 1021 ¶ 37. We find that Rissanen teaches a database that stores data with persistence and tools for interacting with the database.

Nevertheless, Patent Owner argues "[i]f one were going to combine Roseman and Rissenan in order to authenticate an individual (and not merely authenticate a key for a room) the necessary logic would be significantly more complicated." PO Resp. 23. Petitioner does not argue, however, that Rissanen's database would be bodily incorporated into Roseman's system. Rather, Petitioner argues that Rissanen teaches storing data "analogous to and serv[ing] the same purpose as" the keys in Roseman in a database. Pet. 28. *See In re Mouttet*, 686 F.3d 1322, 1332–32 (Fed. Cir. 2012) ("It is

well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements. . . . Rather, the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art."). Given that Roseman describes using keys to access conference rooms that have persistence, we agree with Petitioner that a database, described in Rissanen as storing similar information for a similar purpose, would be a straightforward and predictable choice for storing Roseman's keys.

The parties also dispute whether Roseman and Rissanen teach that the database "serves as a repository of tokens *for other programs to access*, thereby affording information to each of a plurality of participator computers," as recited in claim 1. Petitioner argues that other programs access the stored collection of tokens, including the various meeting or conference rooms maintained on the host computer. Pet. 30. Petitioner relies on disclosure in Roseman that a meeting room is accessible from a virtual hallway with doors to other meeting rooms. *Id.* (citing Ex. 1003, 9:63–65). According to Petitioner, "[e]ach meeting room . . . contains a number of computer programs, and each meeting room itself can be thought of as a program. These programs access the repository of keys when a user presents a key to obtain access to a conference room." *Id.*

Patent Owner argues that "Petitioner does not identify any programs that could access a database of tokens and receive information, other than the singular conference calling software running on the host computer of Roseman." PO Resp. 24–25. According to Patent Owner, "to the extent that there are multiple conference rooms in existence, that is because the

Roseman system has instantiated the same conference room program with different parameters as there is no suggestion that there is different software associated with each conference room." *Id.* Patent Owner does not explain why "other programs" require different software rather than different instantiations of the same software, or point to evidence supporting this view. We are not persuaded that the claims should be limited in this way. Nevertheless, as Petitioner points out (Reply 17–18), Roseman characterizes its conference rooms as collections of different programs (Ex. 1003, 12:16–18) and makes clear that different conference rooms will have different attributes (different virtual equipment, different tools, different appearances, etc.) (*id.* at 3:42–50, 10:9–12). We find that Roseman at least suggests different conference rooms with different programs, even under Patent Owner's view. These programs determine whether a participant can join a meeting room based on evaluations of keys that, in light of Rissanen, would have been stored in a database. Thus, we find that Roseman and Rissanen teach "a database which serves as a repository of tokens for other programs to access," as recited in claim 1.

b. "authenticating a first user identity and a second user identity according to permissions retrieved from the repository of tokens of the database"

As explained above, Roseman discusses a user validation system based on "keys" provided to invitees to a virtual conference—for example, a "Level 1 key" that is restricted to a specific user only—which are used by the invitees to access the conference and enable communications between and among the users and the host computer. *Id.* at 9:34–55, 10:61–65,

11:10–17. We find that this teaches authenticating users according to permissions retrieved from the repository of tokens.

c. "affording some of the information to a first of the participator computers via the Internet network, responsive to an authenticated first user identity"

"affording some of the information to a second of the participator computers via the Internet network, responsive to an authenticated second user identity"

As explained above, Roseman describes admitting participants into a conference room when the participants present keys. Ex. 1003, 10:61–65. We find that this teaches "an authenticated first user identity" and "an authenticated second user identity." Additionally, Roseman describes various ways of affording information to local computers of users admitted to the conference room, including as follows:

> Objects (documents) can be shared in the conference room by placing them on the table. This might be done by dragging an icon of the object from the outside (users non-"meeting room" windows) onto the table. Ownership of the object is still maintained. If the object owner wishes, the object may be copied, borrowed by other users, or given to other users. The object may be altered (changed, annotated) by anyone with permission to do so.

Id. at 11:18–26. *See also* Pet. 36–37. We find that these examples in Roseman teach "affording some of the information to a [first/second] of the participator computers . . ., responsive to an authenticated [first/second] user identity," as recited in claim 1.

The parties dispute whether the prior art teaches affording information "via the Internet Network," as recited in claim 1. As explained above, Roseman describes communicating between a host and local computers via

commercially available LANs and WANs. Ex. 1003, 1:37–41, 3:14–19. Petitioner contends that a skilled artisan would have understood the Internet to be an example of the commercially available WAN described in Roseman. Pet. 37; Ex. 1002 ¶ 83. According to Dr. Lavian, "a person of ordinary skill in the art would have recognized the Internet as one of the largest networks for connecting remote computers (if not the largest), making it the obvious Wide Area Network (WAN) for use with Roseman to connect the host and participant computers." Ex. 1002 ¶ 86; *see also* Ex. 2006 (Lavian Dep.), 104:12–105:23 ("Q So Roseman could have been implemented in that 1994 to '96 time frame with ATM technology? A If I'm looking at the specification of Roseman and what specifically Roseman disclose, it disclose as using a -- local computers become connected to host computer via commercially available Local Area Networks and Wide Area Networks. When you're talking about Local Area Networks and Wide Area Networks, this is the Internet. That's different name to Internet. Q So you're saying that Roseman by itself teaches the Internet? A Roseman by itself reference to remote computers commercially available, commercially available that said Internet. Local Area Networks, definitely part of the Internet. Wide Area Networks, different name to the Internet. It's actually the Internet itself. . . .").

Petitioner further argues that Vetter teaches using the Internet to facilitate the same types of computer-based conferencing functions as described in Roseman. Pet. 37–38. Petitioner contends that Vetter itself identifies a reason to combine the teachings of Roseman and Vetter, namely "[v]ideoconferences are becoming <u>increasingly frequent</u> on the Internet" and

the CU-SeeMe videoconferencing tool described in Vetter "is also becoming very popular." *Id.* at 39 (quoting Ex. 1005, 77 (emphases by Petitioner)).

Patent Owner argues that Vetter does not state that Internet videoconferencing would have been ubiquitous at the time of the invention; rather, Patent Owner argues, the Internet was beginning to support video conferencing. PO Resp. 26. According to Patent Owner, "while communication over the Internet maybe obvious today, the mid-1990's were still the early formative years of the Internet, and one of ordinary skill in the art would not necessarily have looked to the Internet to improve systems such as Roseman." *Id.* at 27. Patent Owner further argues that Vetter describes a system for point-to-point and point-to-mulitpoint communications without the use of a centralized server structure, database, or tokens. *Id.*

We are persuaded by Petitioner. Roseman expressly states that its local computers and host communicate via a commercially available WAN. We credit Dr. Lavian's testimony that, to the extent that this is not an express reference to the Internet, the most suitable and obvious commercially available WAN would have been the Internet. We also find that Vetter suggests using the Internet for purposes similar to those of Roseman. Vetter describes an example in which features such as audio, video, and virtual whiteboard tools are used to conference over the Internet. Ex. 1005, 77–78. Thus, to the extent Roseman does not expressly suggest using the Internet, Vetter includes an express suggestion to update a system such as Roseman using modern electronic components, such as the Internet, to gain the commonly understood benefits of such adaptation. *See Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007);

cf., *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1326–27 (Fed. Cir. 2008) ("The record in this case demonstrates that adapting existing electronic processes to incorporate modern internet and web browser technology was similarly commonplace at the time the '099 patent application was filed."). Vetter reinforces our finding that the Internet would have been the most suitable commercially available WAN for use in Roseman's system. Patent Owner's argument that Vetter does not describe a system with a controller computer, database, or tokens is unpersuasive as it merely attacks Vetter individually without considering the combination proposed by Petitioner. *See In re Merck & Co., Inc.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) ("Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.").

In sum, we find that Roseman and Vetter teach affording information to first and second participator computers "via the Internet network," as recited in claim 1.

d. "running controller software on the controller computer, in accordance with predefined rules, to direct arbitration of which ones of the participator computers interactively connect within a group of the participator computers"

With regard to the limitation, "controller software . . . to direct arbitration of which ones of the participator computers interactively connect within a group of the participator computers," the Petition relies on teachings in Roseman about the functions of the host software on the host computer. Pet. 40–44. For example, Roseman describes applying rules to

govern which conference participants can communicate interactively, and how the participants may communicate, such as a "talking queue" permitting only one participant to speak at a time, permitting only one participant at a time to utilize the pencil tool, and private communication features where only select participants may exchange private communications. Ex. 1003, 3:52–56, 9:16–31, 11:38–46, Fig. 19.

As to "in accordance with predefined rules," Petitioner (Pet. 41) argues that Roseman discloses that a person setting up a conference can determine aspects of the meeting, such as: "What rules govern the conduct of the meeting? Does the Requester have absolute control of the voice and message interaction among the participants? Or Is the meeting a brainstorming free-for-all, where numerous people can speak at once?" Ex. 1003, 3:52–54. As to a specific example, Petitioner points to Roseman's "pencil" tool, through which a participant can write a message in a conference room using the pencil tool, and other participants are disabled from doing so while the first participant has the pencil. Pet. 42 (citing Ex. 1003, Fig. 19). Petitioner also cites to Roseman's "Whisper Mode" for private voice conversations and "note-passing" for private textual conversations as examples of predefined rules that govern how users conduct real-time communications. *Id.* at 42–43 (citing Ex. 1003, 9:16–31, 15:12–15, Fig. 17C). We agree with Petitioner that these are examples of "predefined rules" that "direct arbitration of which ones of the participator computers interactively connect within a group of the participator computers." Thus, we find that Roseman teaches this limitation. We note that Patent Owner does not contest that Roseman teaches this limitation.

e. "providing an API on the controller computer, the API multiplexing and demultiplexing API messages by type, creating a virtual connection and providing the virtual connection between channels, private messages, and multimedia objects in the controller computer and the participator computers"

Claim 1 recites "providing an API on the controller computer, the API multiplexing and demultiplexing API messages by type." For the recited "API," Petitioner identifies a series of software functions for which Roseman provides pseudo-code, including transmitting data files to conference participants, transmitting private notes between participants, and enabling (and disabling) the pencil tool. Pet. 44–47 (citing Ex. 1003, 12:66–13:2, Figs. 16A, 17C, 19). According to Petitioner, this API multiplexes and demultiplexes API messages by type, as recited in claim 1, because "the host computer receives a type of message and routes the message to the appropriate software functionality to handle that message type." *Id.* at 45–47. According to Petitioner,

> Roseman discloses software functionality that transmits and processes particular types of messages, such as placing a document on the table (*causing the document to be sent to each participant*), using the pencil (*causing the participant's actions to be sent to each participant*), sending a private message (*causing the message to be sent only to the intended recipient*), and other messaging functions. Messages corresponding to these commands are multiplexed because the host computer processes each message using the software functionality described above – using the message type to determine the appropriate software.

Id. at 46–47 (emphasis added). Petitioner argues that '356 patent's "description mirrors what the 'host computer' in Roseman does." *Id.* at 47.

In response, Patent Owner argues that "none of Petitioner's evidence indicates the presence of both multiplexing and demultiplexing *on the*

controller computer." PO Resp. 31. According to Patent Owner, any multiplexing identified by Petitioner would occur only in the context of the participator software. *Id.* As to Petitioner's contention that messages corresponding to Roseman's, icon, note, and pencil features "are multiplexed because the host computer processes each message using the software functionality described above – using the message type to determine the appropriate software," Pet. 45–47, Patent Owner argues that "using the message type to determine the appropriate software is actually demultiplexing," PO Resp. 31–32.

In reply, Petitioner notes that Patent Owner, in a related proceeding (IPR2016-01067), proposed construing "multiplexing" to mean "collecting messages from different objects/code and sending the messages over a common channel to the participators," a construction similar to our construction in Section II.A.4 above ("combining and transporting different types of messages over the same connection"). Pet. 22–23 (citing IPR2016-02067, Paper 26, 31). Petitioner contends that it showed, in the Petition, multiplexing in Roseman under Patent Owner's construction. *Id.* at 23. We agree with Petitioner. As explained above, Roseman describes a host receiving icon, note, and pencil messages from the local computers over the Internet (a common communication channel), routing those messages to the appropriate software to handle the messages (demultiplexing), and further sending those messages to each of the participants (in the case of icons and pencil messages) or to only an identified participant (in the case of notes) over the Internet. Ex. 1003, 8:1–5, 9:26–31, 14:53–67, 15:10–13, 15:20–27. We find that, to send these messages of different types to the participants over the same Internet connection (in the combination that includes Vetter's

teachings), the messages would be combined. Therefore, we find Roseman teaches multiplexing as construed ("combining and transporting different types of messages over the same connection").

Patent Owner further argues that Roseman's description of a "whisper mode" teaches away from multiplexing because a whisper mode audio communication is invoked in a separate voice connection that is not shared with the data connection. PO Resp. 32. Even if this is the case, Patent Owner does not explain how it undermines the other examples cited by Petitioner, including icons, notes, and pencil messages, which we find are multiplexed and carried over the same connection.

Claim 1 also recites "creating a virtual connection and providing the virtual connection between channels, private messages, and multimedia objects in the controller computer and the participator computers." Petitioner asserts that Roseman's description of the virtual conference room provided by the host computer, within which the various software functions are made available, teaches the recited "virtual connection." Pet. 47. Petitioner contends that the host software providing a virtual conference room that connects a group of participants is an example of creating a virtual connection between channels in the controller computer and the participator computers. *Id.* at 48. As explained in Section II.A.1 above, "channel" means "a group of participator computers in active communication." Petitioner further argues that Roseman's child rooms are additional examples of channels. Pet. 48 (citing Ex. 1003, 10:18–25).

As discussed above, Roseman also describes private communications features within the virtual conference rooms, including note-passing, which Petitioner maps to the recited "private messages." *Id.* at 48 (citing Ex. 1003,

2:49–50). Petitioner contends that this teaches providing a virtual connection between private messages in the controller computer and the participator computers. *Id.* Finally, Roseman describes "multi-media conferencing" where audio and video are exchanged between participants in a virtual conference room, as well as the sharing of documents and files (including text and graphics). *Id.* at 48–49 (citing Ex. 1003, Abstract, 2:38–45, 7:65–67, 8:1–4, 11:11–13). Petitioner argues that this teaches providing a virtual connection between multimedia objects in the controller computer and the participator computers. *Id.* at 49.

Patent Owner argues that claim 1 "explicitly requires a connection to be established between corresponding objects in the controller and participator computers, necessitating the existence of the claimed objects within the participator computers," and that "Roseman does not disclose any software on the users' computers that could qualify as corresponding participator software that includes the claimed channel objects, private messaging objects, or multimedia objects." PO Resp. 29. Patent Owner argues that Roseman describes generating images on the host computer and sending that same display to each of the local computers, rather than opening files on the local computers. *Id.* at 29–30 (citing Ex. 1003, 8:1–4, 8:11–13).

Petitioner argues that "[t]he claims do not under their broadest reasonable construction exclude a communications system in which the controller computer provides information to participator computers in the form of graphical representations." Reply 21. According to Petitioner, Patent Owner's expert admitted that an "object" in the context of the challenged claims is simply an item of information. *Id.* (citing Ex. 1016,

111:20–112:14).[8] Consistent with Petitioner's argument, Dr. Carbonell testified that "objects" means "items of information," for example, "[i]t can be a figure, it can be a video clip, it can be audio." Ex. 1016, 111:20–112:3. Petitioner argues that Roseman's rendering of a conference room constitutes an "object." Reply 21.

We agree with Petitioner that the claims do not require corresponding software at a participator computer for demultiplexing messages such that an object (item of information) multiplexed at the host and sent to the participator computer is demultiplexed to separate out that object, which is how Patent Owner construes this claim limitation. On one hand, the '356 patent Specification describes demultiplexing and multiplexing on both participator and controller computers to create the disclosed virtual connection between channel, message, and multimedia objects: "De/multiplexing via API provides a 'virtual connection' between Channel, Private Message, and Multimedia objects in the controller computer 3 and each participator computer 5." Ex. 1001, 6:3–5. On the other hand, the caption at the bottom of Figure 2 implies that merely multiplexing API messages creates a "virtual" connection. *See id.* at Fig. 2 ("MULTIPLEXING VIA API PROVIDES A 'VIRTUAL CONNECTION BETWEEN CHANNEL, PRIVATE MESSAGE, AND MULTIMEDIA OBJECTS IN CONTROLLER AND PARTICIPATOR.").

The claims, however, in essence define a "virtual" connection as one created by multiplexing and demultiplexing messages by type on the

[8] Petitioner cites to Exhibit 1014, which we assume is a typographical error. Dr. Carbonell's deposition is Exhibit 1016.

controller computer. For example, claim 1 recites "providing an API *on the controller computer*, the API multiplexing and demultiplexing API messages by type, *creating a virtual connection and providing the virtual connection between channels, private messages, and multimedia objects in the controller computer and the participator computers*."

Although the '356 patent presents different generic or functional descriptions about what it means by a "virtual" connection, the disclosure reveals that a virtual connection is not "a separate connection between each object," which is "[a]n alternate connection" to a "virtual connection." Ex. 1001, 6:3–9. In view of the '356 patent specification, a "virtual" connection "between channels" means that the controller computer connects participators to the same "channel" via the controller computer—meaning that users in a group on that "channel" can chat or teleconference. Roseman's description of placing documents on a virtual conference table, causing the document to be sent to each participant as part of a common rendering, teaches a virtual connection between channels. Pet. 48.

In similar fashion, a "virtual" connection for the claimed "private message" and "multimedia object" simply means a connection through the controller computer and between different users exists so that participators on a "channel" each may see a "private message" and a "multimedia object" (e.g., via a download or URL connection) sent by another participator user. *See* Ex. 1001, Fig. 2, 5:38–43 (describing multimedia as sent by URL links), 5:44–6:9 (discussing private messages, channels, multimedia objects, and virtual connections).

By way of example, the specification describes in general terms how participator computer Block 20, which "is illustrative of demultiplexing and

multiplexing operations carried out by message type on API messages of all types," "links to Block 24, which illustrates handling private message A," and "also links to Block 26, illustrative of handling out-of-band media." Ex. 1001, 5:58–68 (emphases added). These illustrations using different "Blocks" simply describe in functional software terms connecting users on "channels" (so that users can chat and/or send messages) and transferring private messages and multimedia objects between users via the controller computer. *Id.* at 5:43–67. Another feature of a "virtual" connection implied by Figures 1 and 2 is that no direct connection between users exists, rather, an indirect connection routed through the controller computer exists. Ex. 1001, Figs. 1, 2.

We find that Roseman's description of sending notes to an identified participant, and no one else, is a teaching of a connection through the host (controller computer) and between different local computers (participator computers) that allows participators on a "channel" to see a "private message."

Patent Owner also argues that Roseman describes initiating separate data and voice connections when the "whisper mode" is used, rather than a shared connection. PO Resp. 30. This is similar to Patent Owner's argument, discussed above, that Roseman's whisper mode teaches away from claim 1. Once again, Patent Owner does not explain why Roseman's description of one particular type of communication (whisper mode) undermines Petitioner's evidence as to Roseman's other examples of communications, such as note passing and multi-media conferencing.

In sum, we find that Roseman and Vetter teach "providing an API on the controller computer, the API multiplexing and demultiplexing API

messages by type, creating a virtual connection and providing the virtual connection between channels, private messages, and multimedia objects in the controller computer and the participator computers," as recited in claim 1.

f. "communicating real-time messages within the group of the interactively connected said participator computers"

Petitioner identifies Roseman's teachings of real-time communications in the form of sharing documents, writing/drawing on shared documents, and using a virtual pointer to indicate parts of shared documents. Pet. 50–51 (citing Ex. 1003, 2:38–47, 7:54–8:5, 8:41–46, 12:26–28). Petitioner contends that communications in one of Roseman's conference rooms, such as placing documents on a table, drawing on a document, and moving a pointer, take place in real time because they are communicated to participants as the underlying events occur. *Id.* For example, Roseman explains:

> In the invention, the participants share a common virtual conference table. Each participant can
>
> (1) place a document onto the table electronically,
>
> (2) write on the document, draw on it, and otherwise manipulate it, and
>
> (3) move a pointer to different positions on the document, to point to specific parts of it.
>
> All other participants see the [] preceding three events as they occur.

Ex. 1003, 2:38–47. We find that these are specific examples in Roseman of real-time communications sent and received by the participator computers in a group.

Thus, we find that Roseman teaches this limitation of claim 1. We note that Patent Owner does not contest that Roseman teaches this limitation.

In sum, we find that Roseman, Rissanen, and Vetter teach each limitation of claim 1.

4. Remaining Challenged Independent Claims

Claim 19 recites an apparatus configured to perform functions that track the steps of claim 1, except that claim 19 does not recite functions corresponding to "affording some of the information to a [first/second] of the participator computers via the Internet network, responsive to an authenticated [first/second] user identity." Claim 37 is substantively the same as claim 19, except that, where claim 19 recites "affording information to each of a plurality of participator computers which are otherwise independent of each other in communication with each of the participator computers," claim 37 recites "affording information to each of a plurality of independent participator computers which are otherwise independent of each other, *via the Internet network* communicating with the participator computers." Petitioner compares the limitations of claims 1 and 19 side-by-side and argues that claim 19 is taught by Roseman, Rissanen, and Vetter for the same reasons as given for claim 1. Pet. 55–57. Petitioner further compares the limitations of claims 19 and 37 side-by-side and argues that claim 37 is unpatentable for the same reasons as given for claims 1 and 19.

Patent Owner argues claims 19 and 37 along with claim 1. For the reasons given for claim 1, Roseman, Rissanen, and Vetter teach each limitation of claims 19 and 37.

1. Claims 2–5, 8, 9, 12, 16, 20–24, 27, 28, 31, 35

Claims 2–5 depend, directly or indirectly, from claim 1, and recite that the communication content includes communicating at least one, two, three, or four of "sound, video, graphic, pointer, and multimedia content." Claims 20–24 depend, directly or indirectly, from claim 19 and include similar limitations. Petitioner points to examples in Roseman of communicating sound and video (Ex. 1003, 11:11–16 ("Audio and video connections")), graphic content (*id.* at 8:1–4 ("[e]ach Invitee can transmit a file (of any suitable kind: data, text or graphic) to the host")), and multi-media (*id.* at Abstract ("'multi-media' conferencing")). Pet. 51–52, 57. Patent Owner does not present separate arguments for these claims. Based on Petitioner's evidence, we find that Roseman teaches the additional limitations of claims 2–5 and 20–24.

Claims 8, 9, and 12 depend from claim 1. Claim 8 recites "wherein the API includes API messages"; claim 9 recites "wherein communications among the controller computer and the participator computers are mediated via API messages"; and claim 12 recites "wherein the controller software includes multiplexing and de-multiplexing operations carried out as a message type on API messages." Claims 27, 28, and 31 depend from claim 19 and recite similar limitations. Petitioner contends that these claims do not add materially to claim 1 and are unpatentable for the same reasons as given for the limitation of claim 1, "providing an API on the controller computer,

the API multiplexing and demultiplexing API messages by type, creating a virtual connection and providing the virtual connection between channels, private messages, and multimedia objects in the controller computer and the participator computers." Pet. 53, 57–58. Patent Owner does not present separate argument for these claims. We agree with Petitioner that Roseman and Vetter teach the additional limitations for the same reasons as given for claim 1, "providing an API on the controller computer, the API multiplexing and demultiplexing API messages by type, creating a virtual connection and providing the virtual connection between channels, private messages, and multimedia objects in the controller computer and the participator computers."

Claim 16 depends from claim 1 and adds "wherein the communicating is conducted over the network, including the Internet." Claim 35 depends from claim 19 and recites a similar limitation. We find that this limitation is taught by Roseman and Vetter for the same reasons given above for claim 1, the limitation "affording some of the information to a first of the participator computers *via the Internet network*."

2. Claims 14, 15, 33, 34 ("censorship" claims)

Claims 15 and 34 depend from claims 1 and 19, respectively, and add "the controller computer determines censorship." Claims 14 and 33 also depend from claims 1 and 19, respectively, and add a more narrow "determining censorship of the content" and "the computer system determines censorship of the content," respectively. Petitioner presents the same arguments and evidence for both of these sets of claims, without distinguishing between them. Pet. 54, 58.

Petitioner points to Roseman's description of measures that can be taken to prevent participants from speaking. *Id.* at 54 (citing Ex. 1003, 11:40–46, 12:29–45). For example, Roseman's host can act as a moderator, such that

> While one participant is speaking, the host can monitor the audio input of the other participants. The host looks for instances when the speaker refuses to stop talking when the other participants speak. When the host finds such instances, the host issues a message to all participants stating that a filibuster appears to be occurring, and requests a vote as to whether to allow the filibuster to continue.

Ex. 1003, 12:39–45. Petitioner argues that this "mirror[s] the examples of 'censorship' in the written description of the '356 patent." Pet. 54 (citing Ex. 1001, 8:41–46)

As to claims 15 and 34, we agree with Petitioner. These claims simply recite that the controller computer "determines censorship." As explained in Section II.A.2 above, censorship is "control of what is said in a group." Roseman's host preventing participants from speaking is a form of control over what is said in a group. This is similar to the '356 patent's example in which "[c]ensorship can control . . . access to system 1 by identity of the user." Ex. 1001, 8:41–42. Thus, we find that Roseman teaches the additional limitations of claims 15 and 34.

As to claims 14 and 33, however, Petitioner has not explained persuasively why preventing a user from speaking constitutes "censorship of the *content*." As explained in Section II.A.2 above, censorship of the content means "determining whether to communicate content based on characteristics of the content." This aligns with the '356 patent's example in which "[c]ensorship also can use the tokens for real time control of data

(asci, text, video, audio) from and to users, as well as control over multimedia URLs—quantity, type, and subject." Ex. 1001, 8:45–47. When Roseman's host acts as a moderator, it prevents a user from speaking without regard to characteristics of the content. Accordingly, Petitioner has not shown, by a preponderance of the evidence, that claims 14 and 33 would have been obvious over Roseman, Rissanen, and Vetter.

3. Claims 6, 7, 17, 26, 36 ("pointer" claims)

As noted above, claim 2 recites "wherein the communicating content includes communicating at least one of sound, video, graphic, pointer, and multimedia content." Claim 6 depends from claim 2 and recites "wherein said at least one comprises at least five." In our analysis of claim 5, above, we find that Roseman teaches examples of four of these, sound video, graphic, and multimedia, leaving "pointer" unaccounted for. Claim 7 depends from claim 1 and recites "wherein the communicating content includes communicating a pointer that allows the content to be produced on demand." Claim 26 depends from claim 19 and adds a similar limitation. Petitioner cites Roseman and Pike for examples of pointers. Pet. 60–64.

For example, as noted above, Roseman describes a user placing an icon onto the table of a virtual conference room and the host sending the icon to the table of each conference participant. If the icon is clicked by a participant, the host presents the file to all of the participants. Ex. 1003, 14:53–62. Petitioner contends that the icon is a pointer because it points to, or references, an underlying document. Pet. 60–61. We agree, and find that Roseman teaches communicating content by communicating a pointer that allows content to be produced on demand.

Petitioner further cites to Pike "in the event it is later argued or determined that 'pointer' requires an Internet URL or something functionally similar." *Id.* at 61. Although we do not determine that claims 6, 7, and 26 require a URL, claim 17 depends from claim 1 and recites "wherein the communicating content includes communicating content invoked with a URL." Claim 36 depends from claim 19 and includes a similar recitation. Thus, we evaluate whether Roseman, Vetter, and Pike teach communicating content invoked with a URL.

As Petitioner argues (Pet. 61–62), Pike explains that a URL "is a complete description of an item, including the location of the item that you want to retrieve," and can be used to locate and retrieve documents from another computer. Ex. 1006, 36–39. Dr. Lavian testifies that incorporating Pike's URLs into Roseman's system (communicating via the Internet, per Vetter's teaching) "would have predictably resulted in the virtual conferencing system of Roseman in which the clickable icons used to access content (such as documents and notes) included a URL that identified the location of content on the host computer." Ex. 1002 ¶ 121. On this evidence, we find that Roseman, Vetter, and Pike teach communicating content invoked with a URL.

We note that Patent Owner does not present separate arguments for these claims. On the complete record, we find that Roseman, Vetter, and Pike teach the additional limitations of claims 6, 7, 17, 26, and 36.

4. Claims 18, 25 ("JAVA" claims)

Claim 18 depends from claim 1 and recites "wherein the controller software comprises a JAVA™ application." Claim 25 depends from claim

19 and adds a similar limitation. Petitioner cites to Gosling as providing evidence that Java was a known programming language that could be used to build application software. Pet. 64 (citing Lavian Decl. ¶ 131). Petitioner argues that Gosling provides a reason to use Java in Roseman's application, namely, "[o]ne of the obvious benefits of using a bytecode like Java's is that compiled programs are portable: so long as the interpreter is present, programs can execute on any kind of CPU." *Id.* (citing Ex. 1007, 115). Dr. Lavian testifies that "[b]y using Java for the host computer software in Roseman, the developer would be freed from the burden of having to rewrite or change the application in the event of a change in the type of CPU or computer architecture for the server computer." Lavian Decl. ¶ 132. On the complete record, we find that a skilled artisan would have had reason to implement Roseman's system using Java, namely, to create programs that are portable and that can be executed on many kinds of computers without having to be rewritten. Thus, Roseman and Gosling teach the additional limitations of claims 18 and 25.

5. Conclusion of Obviousness

As explained above, Roseman, Rissanen, and Vetter teach each limitation of claims 1–5, 8, 9, 12, 15, 16, 19–24, 27, 28, 31, 34, 35, and 37; Roseman, Rissanen, Vetter, and Pike teach each limitation of claims 6, 7, 17, 26, and 36; and Roseman, Rissanen, Vetter, and Gosling teach each limitation of claims 18 and 25. Petitioner has introduced persuasive evidence that a skilled artisan would have had reasons to combine the teachings of Roseman, Rissanen, Vetter, Pike, and Gosling. Patent Owner does not argue or introduce evidence of objective indicia of nonobviousness.

In sum, upon consideration of all the evidence, we conclude that Petitioner has proved by a preponderance of the evidence, that claims 1–5, 8, 9, 12, 15, 16, 19–24, 27, 28, 31, 34, 35, and 37 would have been obvious over Roseman, Rissanen, and Vetter; that claims 6, 7, 17, 26, and 36 would have been obvious over Roseman, Rissanen, Vetter, and Pike; and that claims 18 and 25 would have been obvious over Roseman, Rissanen, Vetter, and Gosling.

As explained above, Petitioner has not proved by a preponderance of the evidence that claims 14 and 33 would have been obvious over Roseman, Rissanen, and Vetter.

III. PATENT OWNER'S MOTION TO EXCLUDE

Patent Owner filed a paper styled a "Motion to Exclude Evidence," seeking to exclude certain portions of the 2nd Lavian Declaration that it argues exceeds the proper scope of a reply. Paper 37, 1. Specifically, Patent Owner moves to exclude portions of paragraphs 54, 74, and 75 of the 2nd Lavian Declaration. *Id.* at 2–4.

Petitioner opposes this motion on the ground that it is not directed to the admissibility of evidence and, therefore, is procedurally improper. Paper 39, 2. Patent Owner contends that arguments that exceed the scope of a reply are irrelevant, prejudicial, confusing, or misleading under Federal Rules of Evidence 401, 402, and 403. Paper 41, 1–2. As Petitioner points out, however, the Board repeatedly has denied, as improper, motions to exclude that merely argue that evidence is outside the proper scope of a reply. Paper 39, 2–3. Despite its invocation of Rules 401, 402, and 403, we agree that Patent Owner's Motion to Exclude is nothing more than an

argument that Petitioner's Reply exceeds its proper scope. Accordingly, we deny Patent Owner's Motion.

Nevertheless, we have considered Patent Owner's argument with respect to those portions of Petitioner's Reply that are relied upon, and determine they do not belatedly raise new issues or present evidence that should have been presented in the Petition. In any case, we do not rely on paragraphs 54, 74, and 75 of the 2nd Lavian Declaration.

III. CONCLUSION

Petitioner has established by a preponderance of the evidence that claims 1–9, 12, 15–28, 31, and 34–37 are unpatentable, but has not proved that claims 14 and 33 are unpatentable.

IV. ORDER

For the reasons given, it is:

ORDERED, based on a preponderance of the evidence, that claims 1–9, 12, 15–28, 31, and 34–37 are unpatentable; and

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

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