

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

FACEBOOK, INC., INSTAGRAM, LLC,
and WHATSAPP INC.,
Petitioner

v.

BLACKBERRY LIMITED,
Patent Owner.

IPR2019-00899
Patent 8,301,713 B2

Before MIRIAM L. QUINN, ROBERT L. KINDER,
and AARON W. MOORE, *Administrative Patent Judges*.

MOORE, *Administrative Patent Judge*.

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

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I. INTRODUCTION

A. *Background*

Facebook, Inc., Instagram, LLC, and Whatsapp Inc. (collectively, “Petitioner”) filed a Petition for *inter partes* review of claims 1–12 of U.S. Patent No. 8,301,713 B2 (Ex. 1001, “the ’713 patent”). Paper 2 (“Pet.”). Blackberry Limited (“Patent Owner”) filed a Preliminary Response. Paper 10 (“Prelim. Resp.”).

On October 8, 2019, we instituted an *inter partes* review of claims 1–12. Paper 15 (“Decision”), 32. Patent Owner then disclaimed claims 1–3, 5–7, and 9–11 (*see* Ex. 2013) and filed a Patent Owner Response (Paper 23, “PO Resp.”),¹ Petitioner filed a Reply (Paper 27, “Pet. Reply”), and Patent Owner filed a Sur-Reply (Paper 30, “PO Sur-Reply”). An oral hearing was held on July 9, 2020, by video only, and a transcript of the hearing is included in the record. Paper 36 (“Tr.”).

The Board has jurisdiction under 35 U.S.C. § 6. This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73.

¹ As a result of the statutory disclaimer, claims 1–3, 5–7, and 9–11 are no longer regarded as claims challenged in the Petition. *See Vectra Fitness, Inc. v. TNWK Corp.*, 162 F.3d 1379, 1383 (Fed. Cir. 1998) (“This court has interpreted the term ‘considered as part of the original patent’ in section 253 to mean that the patent is treated as though the disclaimed claims never existed.” (citing *Guinn v. Kopf*, 96 F.3d 1419, 1422 (Fed. Cir. 1996))); *see also Sanofi-Aventis U.S., LLC v. Dr. Reddy’s Labs., Inc.*, 933 F.3d 1367, 1372–75 (Fed. Cir. 2019) (explaining that disclaimer during infringement litigation “mooted any controversy” over the disclaimed claims, ending the Article III case or controversy requirement for district court jurisdiction).

For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that remaining claims 4, 8, and 12 of the '713 patent are unpatentable.

B. Related Matters

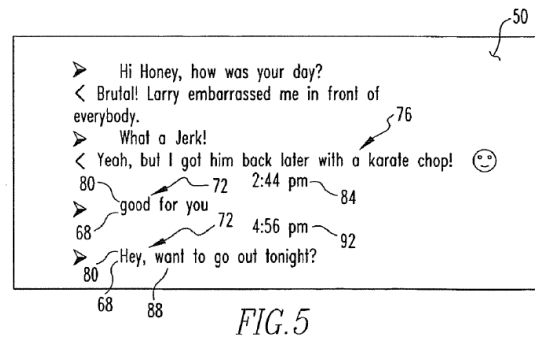
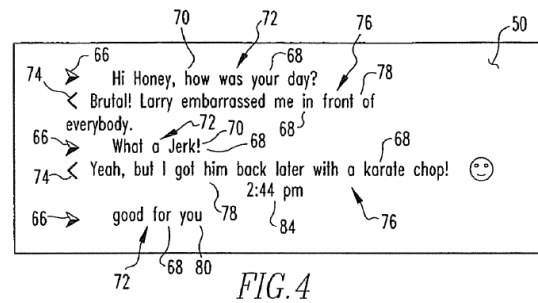
The parties identify *BlackBerry Ltd. v. Facebook, Inc. et al.*, No. 2:18-cv-01844-GW-KS (C.D. Cal.), and *BlackBerry Ltd. v. Snap Inc.*, Case No. 2:18-cv-02693-GW-KS (C.D. Cal.), as related matters. *See* Pet. 1–2; Patent Owner Mandatory Notices (Paper 5) 2. The District Court issued a claim construction ruling in those cases on April 5, 2019, copies of which have been filed as Exhibits 1024 and 2006, and, on February 13, 2020, the District Court entered an order staying the proceedings as to the '713 patent. *See* Paper 25, 1.

Patent Owner also identifies ten inter parties review proceedings as matters that may affect or be affected by this one. *See* Paper 5, at 2–3.

C. The '713 Patent

The '713 patent “relates generally to handheld electronic devices and, more particularly, to a handheld electronic device and a method for providing information representative of the times of certain communications in a messaging environment.” Ex. 1001, 1:18–21.

The claimed invention can be described with reference to Figures 4 and 5, reproduced below:



Figures 4 and 5 are “exemplary view[s] of . . . output[s] provided in accordance with [aspects] of the method of the invention.” Ex. 1001, 43–46.

The exemplary conversation of Figure 4 includes “a plurality of incoming messages 72 and a plurality of outgoing messages 76 that are transmitted . . . at a conversational speed, i.e., at a speed in which back-to-back communications . . . occur without a meaningful delay therebetween.” Ex. 1001, 5:10–16. The patent explains that “[d]ue to the conversational speed of the back-to-back communications,” the messages 68 do not include an indication of the times at which they were transmitted, “it being assumed as a general matter that in such circumstances the specific time at which a given message within such a conversation occurred may not be of significance to a user.” *Id.* at 5:16–22. At a certain point in the conversation, however, “an exemplary message 68 which, for example, may be an outgoing message 76, may also become a non-responded-to message 80, meaning that subsequent to its transmission substantially no additional

communication occurs . . . within a predetermined duration of time.” *Id.* at 5:23–28. In that case, “the message 68 is determined in accordance with the invention to be a non-responded-to message 80, and responsive to such determination a first time stamp 84 is output adjacent the non-responded-to message 80.” *Id.* at 5:35–38.

As shown in Figure 5, “another message 68 may subsequently be communicated” and “[s]ince the message 68 corresponds with a resumption of communication . . . after a period of interruption, the message 68 is determined to be a resumption message 88, and a second time stamp 92 is output adjacent the resumption message 88.” Ex. 1001, 5:63–67. This allows a user to “determine from the output on the display 50 the period of time during which the conversation was suspended, i.e., the time between transmission of the non-responded-to message 80 and transmission of the resumption message 88.” *Id.* at 6:2–6.

The patent also describes an “exemplary output of FIG. 7” in which “the first time stamp 184 and the second time stamp 192 are disposed adjacent one another and are both disposed between the non-responded-to message 180 and the resumption message 188” (Ex. 1001, 6:33–36):

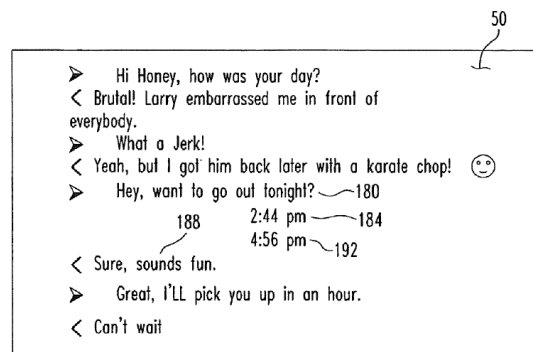


FIG. 7

Figure 7 is “another exemplary view of an output provided in accordance with an aspect of the method of the invention.” Ex. 1001, 51–52.

D. The Challenged Claims

Independent claim 1 is to a method of operating an electronic device, independent claim 4 is a corresponding *Beauregard* claim, and independent claim 9 is a corresponding device claim. They have corresponding sets of dependent claims.

As noted, Patent Owner disclaimed claims 1–3, 5–7, and 9–11 of the ’713 patent after institution. *See* Ex. 2013. The only claims remaining in are dependent claims 4, 8, and 12. Claim 4, reproduced below along with claims 1–3, from which it depends, is representative of the subject matter remaining to be addressed in this proceeding:

1. A method of operating an electronic device, the method comprising:
 - outputting an electronic conversation comprising a plurality of indications, each indication being representative of at least a portion of a corresponding messaging communication between the electronic device and a second electronic device;
 - identifying a first messaging communication between the electronic device and the second electronic device occurring at a first time, the first messaging communication having a corresponding first indication representative of at least a portion of the first messaging communication and which is one of the plurality of indications;
 - determining that a predetermined duration of time has elapsed since the first time without additional communication between the electronic device and the second electronic device during that duration of time;
 - detecting an input to the electronic device following said identifying and determining steps, said input occurring at a second time; and
 - responsive to said detecting an input, outputting in the electronic conversation, a time stamp representative of the second time.

2. The method of claim 1, wherein the input is a resumption message.
3. The method of claim 2, further comprising outputting in the electronic conversation a second indication representative of at least a portion of the resumption message.
4. The method of claim 3, wherein the time stamp is disposed between the first indication and the second indication.

Ex. 1001, 8:48–9:3, 9:6–10.

E. Evidence Relied Upon

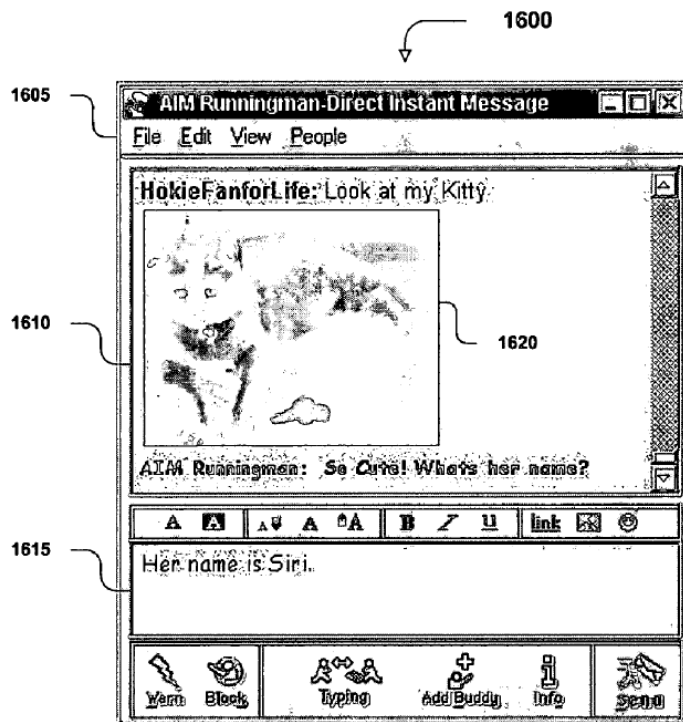
Petitioner relies on the following references:

Reference	Exhibit
U.S. Patent No. 7,366,779 B1, filed June 19, 2000 (“Crawford”)	1003
Jennifer Watson and Dave Marx, <i>Your Official America Online Tour Guide</i> , 6th Edition (AOL Press 2001) (“Watson”)	1004
W. Richard Stevens, <i>TCP/IP Illustrated, Volume 1</i> (Addison-Wesley 1994) (“Stevens”)	1006
Jon C. Snader, <i>Effective TCP/IP Programming</i> (Addison-Wesley 2000) (“Snader”)	1005
Thomas Erickson et al., <i>Socially Translucent Systems: Social Proxies, Persistent Conversation, and the Design of “Babble,”</i> in <i>Proceedings of the SIGCHI Conference on Human Factors in Computing Systems</i> , pp. 72–79 (1999) (“Erickson”)	1007
Julian Missig, <i>iChat Thought Bubbles</i> , sourced from < https://web.archive.org/web/20030204074155/http://missig.org:80/julian/jabber/iChat/ > (“Missig”)	1008

Petitioner also relies on Declarations of Sandeep Chatterjee, Ph.D, filed as Exhibits 1002 and 1031. Patent Owner relies on a Declaration of Rajeev Surati, Ph.D., filed as Exhibit 2001.

1. *Crawford*

Crawford is a United States patent describing aspects of an America Online messaging system. *See* Ex. 1003, 1:12–33. A screenshot illustrating certain features of the system is provided in Figure 16:



Crawford's Figure 16 is an "illustration[] of [a] graphical user interface[]." Ex. 1003, 2:46–47.

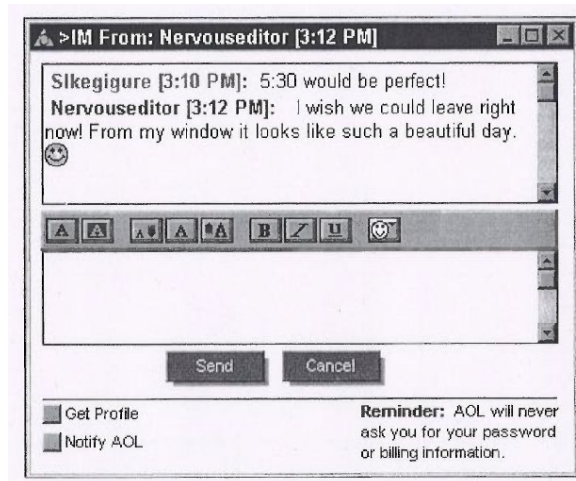
Figure 16 shows that "HokieFanforLife" sent a first message including text "Look at my Kitty" and accompanying image 1620, and that "AIM Runningman" sent a reply message that includes the text "So Cute! Whats her name?" Ex. 1003, 17:57–62, Fig. 16. HokieFanforLife responds "Her name is Siri."

Petitioner also relies on Crawford for its "detailed explanation about how the IM participants' client devices communicate with each other" using

the Transmission Control Protocol (“TCP”).² *See* Pet. 14–15. That comes into play when Petitioner combines TCP/IP references Stevens and Snader with Crawford.

2. *Watson*

Watson is a user guide for America Online, which Petitioner cites for its use of messaging timestamps, such as those in brackets in Figure 7–7:



Watson’s Figure 7-7 shows “[a]n instant message conversation with timestamps.” Ex. 1004, 89.

3. *Stevens and Snader*

Stevens and Snader are texts describing the use of TCP/IP. Petitioner cites Stevens for its description of TCP’s “keepalive timer” which, according to Petitioner, “allows a device to determine when a period of inactivity reaches the predetermined duration of time of two hours, after which a probe is sent to the other device to determine if the other device is still connected.” Pet. 18–19 (citing Ex. 1006, § 23.2, 76). Snader suggests that Stevens’ TCP

² TCP is used for communication over the Internet, using the Internet Protocol (“IP”), the combination being known as TCP/IP. *See* Ex. 1002 ¶¶ 36, 48.

keepalive timer may not be useful in some situations because it requires the connection to be idle for at least two hours, but also provides an improvement: “implementing a similar mechanism in the application,” known as a “heartbeat,” in which the amount of time that a connection can be idle is chosen based on the application’s needs and type of network. *See* Ex. 1005, 95–97.

4. *Erickson*

Erickson is an article that describes messaging software called “Babble,” in which users exchange messages in chat-like conversations. *See* Ex. 1007, 75. The Petition “cites Erickson for a narrow purpose – to disclose the output of a timestamp ‘disposed between’ two messages, as recited in claims 4, 8, and 12.” Pet. 53.

5. *Missig*

Missig is a printout of a web page maintained by the Internet Archive that appears to be an informal review of the Apple iChat messaging application by an individual named Julian Missig and posted on his personal website, missig.org. *See* Ex. 1008; Ex. 1010. The reference describes iChat’s use of timestamps that “appear in small text centered at the top when the chat starts, and whenever there is a gap of about 5 minutes or so . . . if a new message is sent, a new timestamp is printed.” Ex. 1008, 2.

F. *Grounds of Unpatentability*

This trial was instituted on the following grounds:

References	Basis	Claims
Crawford, Watson, Stevens, Snader	§ 103(a)	1–12
Crawford, Watson, Stevens, Snader, Erickson	§ 103(a)	4, 8, 12

References	Basis	Claims
Crawford, Watson, Missig	§ 103(a)	1–3, 5–7, 9–11
Crawford, Watson, Missig, Erickson	§ 103(a)	4, 8, 12

Following Patent Owner’s disclaimer, this Final Written Decision addresses the following claims and grounds:

References	Basis	Claims
Crawford, Watson, Stevens, Snader	§ 103(a)	4, 8, 12
Crawford, Watson, Stevens, Snader, Erickson	§ 103(a)	4, 8, 12
Crawford, Watson, Missig, Erickson	§ 103(a)	4, 8, 12

II. ANALYSIS

We discuss below the level of skill in the art, claim construction, and the patentability of remaining challenged claims 4, 8, and 12.

A. *Level of Ordinary Skill in the Art*

Petitioner asserts that a person of ordinary skill in the art “would have possessed at least a bachelor’s degree in software engineering, computer science, computer engineering, or electrical engineering with at least two years of experience in software application development, including development of applications for messaging on mobile or wireless devices, such as development of associated user interface features and functionality (or equivalent degree or experience).” Pet. 5 (citing Ex. 1002 ¶¶ 12–15).

Patent Owner argues that a person of ordinary skill in the art “would have had a bachelor of science degree in Computer Engineering/Computer Science or similar subject matter, or at least approximately two years of work or research experience in the fields of computer software, networking, and/or user experience design, or an equivalent subject matter, sufficient to

understand fundamental computer networking and software architecture and user-interface design.” PO Resp. 11 (citing Ex. 2012 ¶¶ 8–9).

Although the parties’ formulations differ in some respects, neither argues that the differences would matter to the claim construction or validity analyses. That being the case, for purposes of this decision, we adopt Patent Owner’s proposal, which is consistent with the level of skill reflected in the prior art of record and the ’713 patent.

B. Claim Construction

In an *inter partes* review for a petition filed on or after November 13, 2018, such as this one, a claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2019). In applying this claim construction standard, we are guided by the principle that the words of a claim “are generally given their ordinary and customary meaning,” as understood by a person of ordinary skill in the art in question at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc) (citation omitted). “In determining the meaning of the disputed claim limitation, we look principally to the intrinsic evidence of record, examining the claim language itself, the written description, and the prosecution history, if in evidence.” *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 469 F.3d 1005, 1014 (Fed. Cir. 2006) (citing *Phillips*, 415 F.3d at 1312–17).

We address certain terms that have been identified for construction by the parties, in the order originally raised.

1. *“resumption message”*

The parties agree that “resumption message” should be construed as “message after a period of interruption.” *See* Pet. 8; PO Resp. 27. We find this agreed construction to be supported in the Specification (*see, e.g.*, Ex. 1001, 5:64–6:2) and, therefore, adopt it.

Patent Owner also argues in connection with this term that “the claimed ‘outputting’ of a time stamp representative of the second time must be performed ‘responsive to’ . . . detecting a ‘resumption message,’” that “detecting a ‘resumption message’ is a different condition from simply detecting every instant message of any type,” and that, as a result, the claims “do not encompass methods that output a time stamp invariably with every input message, without regard as to whether the instant message was detected to be a resumption message.” PO Resp. 27–28. We see this argument as pertaining to the “responsive to” limitation, and address it in the course of our discussion of that term below.

2. *“predetermined duration of time”*

Petitioner contends that “predetermined duration of time” means “a length of time set in advance before the first messaging communication is sent.” Pet. 10. Patent Owner argues that “the proper construction of this phrase is ‘a duration of time determined based on computer programming that is implemented prior to the first messaging communication.’” PO Resp. 25 (citing Ex. 2012 ¶ 22; Ex. 2006, 27). However, the parties agree that “the Board need not construe this term for purposes of comparing the claims to the prior art references cited in this proceeding.” PO Resp. 26.

We agree that this term does not need to be interpreted for us resolve the patentability issue and, therefore, do not construe it. *See Vivid Techs.*,

Inc. v. Am. Sci. & Eng'g, Inc., 200 F.3d 795, 803 (Fed. Cir. 1999) (holding that “only those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy”); *see also Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017).

3. *“responsive to said detecting an input wherein the input is a resumption message, outputting in the electronic conversation, a time stamp representative of the second time”*

Patent Owner argues that “remaining claims 4, 8, and 12 further narrow the original phrase ‘responsive to said detecting an input’ to only that condition in which the recited ‘input’ must be ‘a resumption message’” and that “[t]herefore, the claimed ‘outputting’ of a time stamp representative of the second time does not encompass outputting a time stamp invariably with every input message, but instead must be performed ‘responsive to’ a specific and tailored condition—said detecting ‘a resumption message.’” PO Resp. 12–13. Patent Owner further argues that the ’713 patent “expressly disparage[s] such a method as something to be ‘avoid[ed]’” and that ““every embodiment disclosed’ in the ’713 patent shows the opposite configuration in which a timestamp is not displayed with every instant message.” *Id.* at 13.

According to Patent Owner, “this limitation of claim 4 does not merely recite ‘outputting a time stamp representative of a second time,’” but instead “requires more,” because

[w]hen the entirety of claim 4’s requirements are considered, it is plain to see that a specific type of ‘outputting’ must be performed in response to a required condition precedent (detecting a resumption message) and with reference to other

preceding steps in the claim (‘said’ detecting step which must follow ‘said’ identifying and determining steps).

PO Resp. 13–14.

Patent Owner more specifically argues that the Petition’s “analysis of Grounds 12 implies a claim scope premised on at least four legal errors”:

(1) “the law forbids the claims to be interpreted in a manner that encompasses the traditional method disparaged and expressly ‘avoided’ in the ’713 patent specification”; (2) “the law forbids an overly broad interpretation of the claims that are inconsistent with ‘every embodiment disclosed’ in the ’713 patent”; (3) “ignoring the prosecution history of the ’713 patent”; and (4) not acknowledging that the “Federal Circuit has previously held that ‘responsive to’ language should be treated as a condition precedent for selectively performing the claimed step, which is distinct from prior methods that ‘invariably’ perform the step.” PO Resp. 14, 16, 20, 22.

We begin our analysis with the claims, and then discuss Patent Owner’s arguments regarding the Specification, the file history, and the cases cited regarding “responsive to.”

a. The Claim Language

We find that Patent Owner’s arguments are not supported by the claim language. Claim 1 requires outputting a time stamp in response to the detection of a resumption message, but simply does not require that time stamps are output *only* upon the detection of a resumption message, or that time stamps are *not* output upon the detection of a non-resumption message.

Patent Owner’s argument that claim 2 narrows claim 1 such that timestamps are only output upon satisfaction of a “condition in which the

recited ‘input’ must be ‘a resumption message’” is not persuasive. Claim 2 does limit the type of “input” that triggers the claimed output of a timestamp to resumption messages, but it does not narrow claim 1 to require that timestamps be output *only* upon detection of that input. While it is correct to say that claim 2 recites the output of a time stamp upon receipt of a resumption message, and that the output of *that* time stamp is thus “conditioned” on receipt of the time stamp, nothing in the claim limits what happens if the condition is not satisfied.

b. The Specification

Patent Owner argues that “the law forbids the claims to be interpreted in a manner that encompasses the traditional method disparaged and expressly “avoided” in the ’713 patent specification.” PO Resp. 14.

To support this argument, Patent Owner points us to the following portions of the Specification of the ’713 Patent:

If the conversation continues quickly, i.e., substantially without interruption, the messages do not need a time stamp on them. In the environment of a handheld electronic device, it would be desirable to avoid unnecessary time stamps and other unnecessary output since it occupies too much valuable space on the limited display of the handheld electronic device.

Ex. 1001, 1:56–67.

The different fashions of selectively providing intelligent time data in the form of selectively output time stamps advantageously saves valuable space on the display 50. Moreover, such selective outputting of time stamps advantageously avoids unnecessary visual clutter on the display 50.

Id. at 8:34–3. *See* PO Resp. 14–15.

As an initial matter, we do not agree with Patent Owner that “the law forbids” claim interpretations that encompass features that are disparaged.

There is no absolute rule; instead, and as in the cases cited by Patent Owner,³ claim interpretation involves a holistic analysis of the claim language, the specification, the file history, and any available extrinsic evidence. *See Philips*, 415 F.3d at 1312–17. And, of course, “[t]here is a heavy presumption that claim terms are to be given their ordinary and customary meaning.” *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1358 (Fed. Cir. 2017). “Properly viewed, the ‘ordinary meaning’ of a claim term is its meaning to the ordinary artisan after reading the entire patent.” *Id.* (quoting *Phillips*, 415 F.3d at 1321).

That said, we also do not agree with Patent Owner’s analysis of the cited passages, because both are describing concerns that are present in handheld devices, with correspondingly small screens. The first specifically identifies “the environment of a handheld electronic device,” and the second expresses concerns associated with “display 50,” which is that of a handheld device. *See* Ex. 1001, 3:66–4:10. The claims, however, are directed more generally to “electronic devices,” and Patent Owner does not show that the concerns about display size that exist in handheld devices necessarily apply to all electronic devices. Patent Owner thus has not shown that the advantages identified in the specification would necessarily apply to the full scope of devices covered by the claims. This significantly undercuts Patent Owner’s argument that claims must be read to include this feature. *See Tate Access Floors, Inc. v. Maxcess Techs., Inc.*, 222 F.3d 958, 966 (Fed. Cir.

³ *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337 (Fed. Cir. 2001); *Techtronic Indus. v. International Trade Commission*, 944 F.3d 901 (Fed. Cir. 2019); *Inpro II Licensing, S.A.R.L. v. T-Mobile USA, Inc.*, 450 F.3d 1350, 1354 (Fed. Cir. 2006).

2000) (“[A]lthough the specification may well indicate that certain embodiments are preferred, particular embodiments appearing in the specification will not be read into the claims when the claim language is broader than such embodiments.”) (quoting *Kemco Sales, Inc. v. Control Papers Co.*, 208 F.3d 1352, 1362 (Fed. Cir. 2000)).

Patent Owner next argues that “the law forbids an overly broad interpretation of the claims that are inconsistent with ‘every embodiment disclosed’ in the ’713 patent.” PO Resp. 16. Again, however, there is no such prohibition and, in fact, the Federal Circuit explained in *Philips* that “although the specification often describes very specific embodiments of the invention, [the Court has] repeatedly warned against confining the claims to those embodiments.” 415 F.3d at 1323; *see also Nazomi Communications, Inc. v. ARM Holdings, PLC*, 403 F.3d 1364, 1369 (Fed. Cir. 2005) (also confirming that claims may embrace “different subject matter than is illustrated in the specific embodiments in the specification”). It is thus clear that the law does *not* require us to interpret the claims to cover the described embodiments. Instead, we consider the descriptions of the disclosed embodiments as part of a full analysis of the record.

We agree with Patent Owner that all disclosed embodiments that determine a predetermined duration of time has elapsed, as claimed, describe generating time stamps only for resumption messages. *However*, we do not agree that the claims must be construed to preclude time stamps for non-resumption messages in order to be “consistent” with the disclosed embodiments. This is because construing the claims as specifying what happens upon receiving a resumption message, but not specifying what happens upon receipt of a non-resumption message, is not *inconsistent* with

the disclosed embodiments. Instead, it simply reflects that the claim drafter elected to not cover all aspects of those embodiments. This is not uncommon. For example, all disclosed embodiments of the '713 patent also involve a mobile device, but the claims are not limited to mobile devices. In the same way that the claims need not be limited to the mobile device of all embodiments, they need not be limited to excluding the display of timestamps for non-resumption messages, even if that occurs in all embodiments.

Patent Owner's argument that it is not necessary to show an "express" disavowal (*see* Sur-Reply 6–7) is unpersuasive in view of the mismatch between the "disparagement" and the claim scope, and the cases cited by Patent Owner on this point⁴ are thus inapposite.

Patent Owner also argues that "it is impossible to discern how Petitioner's claim construction would be any different under a BRI analysis, which is improper here." PO Sur-Reply 6. There is nothing, however, that requires the different claim construction frameworks to result in different claim constructions. *See Facebook, Inc. v. Pragmaus AV, LLC*, 582 Fed. Appx. 864, 869 (Fed. Cir. 2014) ("The broadest reasonable interpretation of a claim term may be the same as or broader than the construction of a term under the *Phillips* standard.").

⁴ *On Demand Mach. Corp. v. Ingram Indus.*, 442 F.3d 1331 (Fed. Cir. 2006); *Bell Atlantic Network Services, Inc. v. Covad Communications Group, Inc.*, 262 F.3d 1258 (Fed. Cir. 2001); *SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337 (Fed. Cir. 2001); *Trustees of Columbia Univ. v. Symantec*, 811 F.3d 1359 (Fed. Cir. 2016); *Cheese Sys. v. Tetra Pak Cheese & Powder Sys.*, 725 F.3d 1341 (Fed. Cir. 2013).

c. The Prosecution History

Patent Owner argues that the prosecution history “unambiguously clarified that the claimed invention outputs a timestamp ‘only when a time elapsed between communication of consecutive messages exceeds a predetermined duration.’” PO Resp. 20 (citing Ex. 2002, 547–551, 614–618). Specifically, Patent Owner argues that “the applicant repeatedly argued that Appleman, which teaches that a time stamp is included with every message . . . , alone and in combination with other references, ‘fail[s] to teach or suggest selectively displaying time information.’” *Id.* at 21. Patent Owner claims that “[t]he prosecution history crystallized the same fact repeated in all embodiments of the specification—that the claimed invention displays time stamps selectively in response to a detected timing condition, not invariably with every instant message on the screen.” *Id.* at 22.

We first summarize the file history to provide background for our analysis, focusing on claim 1 of the application, which was eventually canceled, and claim 13 of the application, which issued as claim 1 of the patent.

Claim 1 of the application recited a method of displaying an instant messaging conversation that included the step of “displaying time information . . . only when a time elapsed between communication of the consecutive messages exceeds a predetermined duration.” *See* Ex. 2002, 31. Claim 13 of the application was a method claim that included the patent claim 1’s “determining,” “detecting,” and “responsive to detecting steps.”

In the first Office Action, the examiner rejected claim 1 as unpatentable over Appelman and Yamada. *See* Ex. 2002, 263–264. The

examiner explained that “Appelman is silent about displaying time information in association with at least one of two consecutive messages of the conversation only when a time elapsed between communication of the consecutive messages exceeds a predetermined duration,” but that it would have been obvious “to incorporate Yamada’s teaching . . . in order to alert the user only when the timer expires by displaying time information in association with at least one of two consecutive messages of the conversation only when a time elapsed between communication of the consecutive messages exceeds a predetermined duration.” The examiner rejected claim 13 as unpatentable over Appelman, Yamada, and Hwang, combining Appelman and Yamada in the same way as for claim 1. *See* Ex. 2002, 269.

The applicant responded to the rejection with argument, citing the portions of claim 1 that expressly recited displaying time information only when a predetermined amount of time had passed, and asserting that “neither Appelman nor Yamada teach displaying time information only when a time elapsed between communication of consecutive messages exceeds a predetermined duration.” Ex. 2002, 547–548. The applicant also argued that Appelman and Yamada were not reasonably combined. *See id.* at 548. Regarding the rejection of claim 13, the applicant made the following argument:

Applicant has shown above that Appelman and Yamada, both individually and in combination, fail to teach or suggest selectively displaying time information. *With respect to claim 13*, Applicant respectfully submits that Appelman and Yamada *also fail to teach*, responsive to detecting an input following determining that a predetermined duration of time has elapsed since a first time, outputting in an electronic conversation, a

time stamp representative of a second time. Neither reference has recognized let alone addressed the advantage of balancing the competing objectives of providing useful time information and conserving display space.

Ex. 2002, 550 (emphasis added).

In the next office action, the Examiner rejected claim 1 as unpatentable over Appleman and Nobukiyo. *See* Ex. 2002, 563. The examiner found that it would have been obvious “to incorporate Nobukiyo’s teaching into Appelman’s method for the purpose of providing time data regarding certain aspects of a messaging conversation between handheld electronic devices to a user in situation where an interruption has occurred during a messaging conversation by displaying time information only when a time elapsed between communication of the consecutive messages exceeds a predetermined duration, thereby alerting the user only when needed and timely.” *Id.* at 563–64. The Examiner rejected claim 13 as unpatentable over Appelman, Nobukio, and McPhail, finding that “Appelman is silent about determining that a predetermined duration of time has elapsed since the first time without additional communication,” but that it would have been obvious “to incorporate Nobukiyo’s teaching . . . in order to alert the user when a timer expires (i.e., a predetermined duration of time has elapsed) by determining that a predetermined duration of time has elapsed since the first time without additional communication.” *See* Ex. 2002, 570.

The applicant responded to the second rejection of claim 1 by arguing that “[t]here is nothing in Appelman that teaches or suggests selectively including or not including time information according to certain conditions, let alone displaying time information in association with at least one of two consecutive messages of the conversation only when a time elapsed between

communication of the consecutive messages exceeds a predetermined duration, as recited in claim 1.” Ex. 2002, 614. The applicant further argued that “Nobukiyo does not teach what is missing from Appelman and, even if combined with Appelman, the combination fails to teach or suggest: ‘displaying time information in association with at least one of two consecutive messages of the conversation only when a time elapsed between communication of the consecutive messages exceeds a predetermined duration.’” *Id.* at 615.

The applicant then made the following argument regarding the second rejection of claim 13, mirroring the argument from the preceding response:

Applicant has shown above that Appelman and Nobukiyo, both individually and in combination, fail to teach or suggest selectively displaying time information. *With respect to claim 13*, Applicant respectfully submits that Appelman and Nobukiyo *also fail to teach*, responsive to detecting an input following determining that a predetermined duration of time has elapsed since a first time, outputting in an electronic conversation, a time stamp representative of a second time. Neither reference has recognized, let alone addressed, the advantages of balancing the competing objectives of providing useful time information and conserving display space.

Ex. 2002, 616 (emphasis added). The applicant also argued that “MacPhail fails to make up for the deficiencies in Appelman and Nobukiyo” because it “does not teach or suggest, responsive to detecting an input following determining that a predetermined duration of time has elapsed since a first time, outputting in an electronic conversation, a time stamp representative of a second time.” *Id.* at 616. The applicant argued that McPhail’s disclosure “is quite dissimilar to selectively displaying time information for a message by: responsive to detecting an input following determining that a predetermined duration of time has elapsed since a first time, outputting in

an electronic conversation, a time stamp representative of a second time responsive to detecting an input in association with an indication for a message.”

Following a telephone interview, the examiner canceled claims 1–12, which were the claims that recited displaying the time information “only when a time elapsed,” and allowed claims 13–24. *See* Ex. 2002, 628–29.

Upon careful consideration, we cannot agree with Patent Owner that this sequence of events is sufficient to support a construction of the claims that would require no timestamp in the event of a message that is not a resumption message.

In connection with claim 13, the applicant twice argued that it “ha[d] shown above [i.e., when arguing claim 1] that Appelman and [Yamada or Nobukiyo], both individually and in combination, fail to teach or suggest selectively displaying time information.” Ex. 2002, 550, 616. The argument continued that “[w]ith respect to claim 13, . . . Appelman and Nobukiyo also fail to teach, responsive to detecting an input following determining that a predetermined duration of time has elapsed since a first time, outputting in an electronic conversation, a time stamp representative of a second time.” Ex. 2002, 550, 616.

We read the applicant’s argument as being that the references (a) do not teach displaying a timestamp only when the time has elapsed, as in application claim 1, and (b) also do not teach the detecting, determining, and outputting steps recited in application claim 13. We do not interpret this as contending that application claim 13 was patentable because it broadly requires selectively displaying time information, but, instead, that it was patentable due to the specific detecting, determining, and outputting steps

recited in that claim. Our conclusion is supported in the examiner's determination that application claim 13 was allowable, but that application claim 1 was not. If application claim 13 was allowable because it required displaying a timestamp *only* when the time has elapsed, then application claim 1, which explicitly required that, would have been allowable as well.

Patent Owner also points to the argument that MacPhail's teachings were "quite dissimilar to selectively displaying time information for a message by: responsive to detecting an input following determining that a predetermined duration of time has elapsed since a first time, outputting in an electronic conversation, a time stamp representative of a second time responsive to detecting an input in association with an indication for a message." *See* PO Sur-Reply 2–3 (citing Ex. 2002, 617). We find that this does not support Patent Owner's argument, and instead undercuts it, because it suggests that "selectively displaying" was simply the applicant's shorthand for the detecting, determining, and outputting steps, which do not recite what happens in the event of receipt of a non-resumption message.

We disagree with Patent Owner's analysis of the file history, and thus find that it does not support Patent Owner's proposed claim construction. However, even if we did agree with Patent Owner's reading of the file history, we find that it still would be insufficiently clear to justify reading what amounts to an entirely new limitation into the claim. *See 3M Innovative Properties Co. v. Tredegar Corp.*, 725 F.3d 1315, 1325 (Fed. Cir. 2013) ("[I]n order for prosecution disclaimer to attach, the disavowal must be both clear and unmistakable."); *see also Phillips*, 415 F.3d at 1317 ("[B]ecause 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.”).

d. “Responsive To”

Patent Owner argues that the “Federal Circuit has previously held that “responsive to” language should be treated as a condition precedent for selectively performing the claimed step, which is distinct from prior methods that ‘invariably’ perform the step.” PO Resp. 22 (citing *Creative Internet Adver. Corp. v. Yahoo!, Inc.*, 476 Fed. Appx. 724 (Fed. Cir. 2011); *WAG Acquisition, LLC v. WebPower, Inc.*, 781 Fed. Appx. 1007 (Fed. Cir. 2019); *General Protecht Group, Inc. v. ITC*, 619 F.3d 1303 (Fed. Cir. 2010)). Patent Owner contends that “the Petition ignored the ‘responsive to’ condition as if it was not a required condition at all, especially for the narrowed condition required by the dependent claims.” *Id.*

We agree with Patent Owner that “responsive to” generally reflects a situation in which a condition must be satisfied for something to occur, but we do not agree that it was ignored in the Petition. These claims recite that a time stamp is output if the condition of receiving a resumption message is satisfied. That does not, however, speak to what, if anything, happens in the case of receipt of a non-resumption message. Patent Owner’s distinction between methods with a “condition precedent” and methods that “invariably perform the step” is a faulty dichotomy. That an action is conditioned on the occurrence of one thing (e.g., receipt of a resumption message) does not, standing alone, preclude that same action from being performed on the occurrence of another thing (e.g., receipt of a non-resumption message). We accordingly find this argument unpersuasive and insufficient to support Patent Owner’s proposed construction.

e. Conclusion

Because we find insufficient support in the claim, the specification, the file history, or the cited cases for Patent Owner's proposed construction, we decline to read the claims as limited to cases in which time stamps are output only in the case of resumption messages. The claims do require that a time stamp is generated when a resumption message is received, but they do not require that a time stamp is not output when a non-resumption message is received.

No matter the content of the specification, it always falls to the applicant to present and prosecute *claims* that include the features deemed important to the invention and necessary to avoid the prior art, while not unduly narrowing the scope of protection. As Judge Rich famously observed, "the name of the game is the claim."⁵ In this instance, the claim drafter elected to not recite what happens in the case of a non-resumption message. It is not our place to undo that decision in this proceeding.

C. Obviousness

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. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). The question of obviousness is resolved on the basis of underlying factual determinations including (1) the scope and content of the prior art; (2) any

⁵ Giles S. Rich, *Extent of Protection and Interpretation of Claims—American Perspectives*, 21 Int'l Rev. Indus. Prop. & Copyright L. 497, 499 (1990).

differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) any secondary considerations, if in evidence.⁶ *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

1. *Grounds 1 and 2: Crawford, Watson, Stevens, Snader, and Erickson*

We first describe the combinations advanced by Petitioner in Grounds 1 and 2 for remaining claim 4, including the limitations of the now disclaimed claims 1–3 from which claim 4 depends.

a. *Claim 1*

i. “[a] method of operating an electronic device”

Petitioner argues that Crawford discloses an “electronic device” and “a number of techniques that enable the client device to establish and conduct an instant messaging conversation.” Pet. 21–22.

ii. “outputting an electronic conversation comprising a plurality of indications, each indication being representative of at least a portion of a corresponding messaging communication between the electronic device and a second electronic device”

According to Petitioner, “[t]he ‘electronic conversation’ in Crawford takes the form of an instant message conversation between at least two people,” as shown in Figure 16. *Id.* at 24–25. Petitioner argues “the plurality of indications corresponds to the content of the messages” and that, for example, “[a] first indication corresponds to HokieFanforLife’s message that includes the text “Look at my Kitty” and accompanying image 1620”

⁶ Patent Owner does not present any objective evidence of nonobviousness (i.e., secondary considerations) as to any of the challenged claims.

and “[a] second indication corresponds to AIM Runningman’s reply ‘So Cute! Whats her name?’” *Id.* at 25–26.

- iii. *“identifying a first messaging communication between the electronic device and the second electronic device occurring at a first time, the first messaging communication having a corresponding first indication representative of at least a portion of the first messaging communication and which is one of the plurality of indications”*

Petitioner contends that the “identifying” step “is disclosed by Crawford in view of Watson.” Pet. 27. Specifically, Petitioner asserts that Watson describes a “timestamping feature that lets [a user] see when [the] instant messages are sent and received.” *Id.* at 29. According to Petitioner, a person of ordinary skill in the art would have had “a number of reasons” to add Watson’s timestamps to Crawford,” including that “Watson provides an express motivation for the combination by extolling the advantages of its timestamping feature,” calling it a “useful tool” that is “wonderfully helpful.” *Id.* at 29, 34.

- iv. *“determining that a predetermined duration of time has elapsed since the first time without additional communication between the electronic device and the second electronic device during that duration of time”*

Petitioner argues that the “determining” step “would have been obvious . . . in view of Stevens and Snader” because it “recites nothing more than known functionality for detecting an idle TCP socket connection.” Pet. 35. According to Petitioner, “Stevens explains that TCP connections – such as the connections established between client devices in Crawford – can remain open for extended periods without any information being sent or

received,” presenting “a specific challenge – how does one determine if the lack of communication is attributable to a break in the conversation (just like an in-person conversation), or because of a communications or network failure?” *Id.* at 35–36. To address this problem, Petitioner points to Stevens’ keepalive timer and Snader’s “improvement [of] ‘implementing a similar mechanism in the application,’” i.e., the heartbeat, “which allows the idle time to be set to shorter time durations.” *Id.* at 36.

For a motivation to combine, Petitioner argues that the combination “would have predictably resulted in the instant messaging system of Crawford and Watson . . . in which a client device could determine whether the connection with the other client device has been idle for a predetermined duration of time, such as 60 seconds as suggested in Snader.” Pet. 40. Petitioner further argues that (1) “Snader itself provides an express motivation to combine by providing ‘44 Tips to Improve Your Network Programs’ [and] ‘the implementation of the keep-alive feature is ‘Tip 10,’” (2) “Snader explains that ‘network outages or system crashes can render peer applications unable to communicate with each other without either application being immediately aware of the fact,” and (3) “[a] person of ordinary skill would also have been motivated to adapt Crawford to detect an idle TCP connection in order to determine whether the other device had suffered a connectivity failure.” *Id.* at 41. Petitioner argues that “[a] lost connection could be reported in a timely manner in keeping with the real-time, conversational nature IM communication” and “[t]he client device could then take appropriate action in response, such as attempt to reconnect to continue the IM conversation,” whereas, “[w]ithout this functionality, a user would not know whether a lack of incoming messages from the other

client was the result of a gap in the conversation or a network failure.” *Id.* at 42 n.8. Petitioner concludes that one would “have been motivated to adapt the instant message system of Crawford to detect whether the TCP connection between the two devices has been idle or inactive for a specified period of time” because “[t]his would have allowed the client to determine whether the idleness of the connection was attributable (1) to a lack of communications in the IM conversation, or (2) a disruption in the actual communication link between two clients.” *Id.* at 41–42.

Petitioner also argues that although the motivation to adapt Crawford to perform the “determining” step from Stevens and Snader is not the same reason the step is performed in the ’713 patent, the difference “is legally irrelevant . . . because ‘the skilled artisan need not be motivated to combine [] for the same reason contemplated by [the inventor].’” Pet. 42–43 (quoting *In re Kahn*, 441 F.3d 977, 990 (Fed. Cir. 2006)).

v. *“detecting an input to the electronic device
following said identifying and determining
steps, said input occurring at a second time”*

Petitioner argues that “the ‘input to the electronic device following said identifying and determining steps’ takes the form of the second message shown sent after approximately two minutes of inactivity, e.g., the message from AIM Runningman at 3:12PM (‘So Cute! Whats her name?’)” and “[t]his limitation simply corresponds to electronic device in Crawford receiving a second instant message (or detecting a command to send an instant message) after the “keep-alive” technique in Snader determined that the TCP connection was idle/inactive for the predetermined duration of time (e.g. 60 seconds).” Pet. 43–44. For example, in the case of an outgoing message that did not receive a response for two minutes, the heartbeat

mechanism would determine that a sixty second period of time elapsed with no communication after the outgoing message and check the connection, and the subsequent incoming message would be the input at a second time.

- vi. *“responsive to said detecting an input, outputting in the electronic conversation, a time stamp representative of the second time”*

Finally, Petitioner argues that “Crawford discloses the claimed electronic conversation” and that “it would have been obvious in view of Watson to output a timestamp with a message in the conversation, where the timestamp represented the time that the message was sent or received.” Pet. 45. Petitioner also “observes that the instant messaging system under the combination of Crawford and Watson would display a timestamp with every instant message” but argues the claim does “not appear to impose any requirement that the timestamp only be output when the predetermined duration of time has elapsed.” *Id.* at 46.

b. *Claims 2–3*

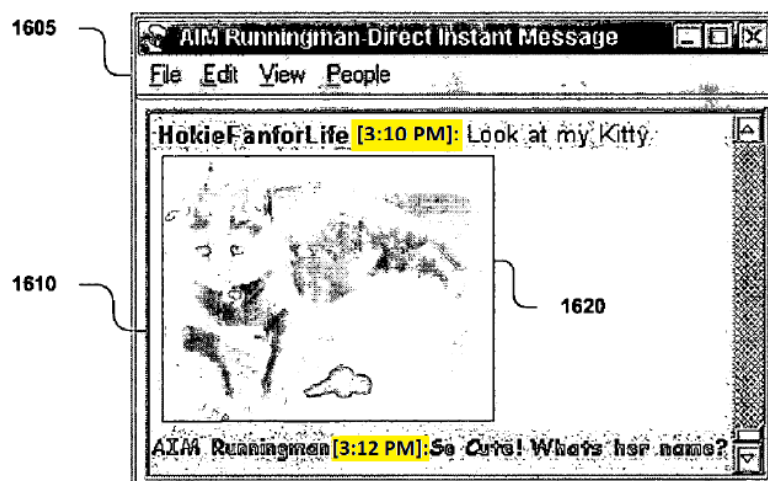
Claim 2 recites that “the input is a resumption message” and claim 3 recites “outputting in the electronic conversation a second indication representative of at least a portion of the resumption message.”

Petitioner argues that “the ‘resumption message’ could take the form of the second message from AIM Runningman associated the ‘3:12PM’ timestamp [of Crawford] . . . , which shows the communication having been resumed after a delay of approximately two minutes” and that “[t]he ‘second indication’ could take the form of the content of the second message from AIM Runningman (e.g. ‘So cute! What is her name’) as shown in Figure 16” of Crawford. Pet. 47.

c. Claim 4

Claim 4 recites that “the time stamp is disposed between the first indication and the second indication.”

Petitioner argues that Watson discloses timestamps that are disposed between indications in that, for example, Figure 7–7 shows a time stamp (“[3:12]”) that is positioned between parts of the first and second messages. *See* Pet. 48. Petitioner illustrates how that might work with a markup of Crawford’s Figure 16, excerpted below:



*Petitioner’s Combination of Crawford’s
Figure 16 and Watson’s Figure 7–7*

In this example, the timestamp [3:12 PM] “appears after the ‘first indication’ in Crawford (i.e. ‘Look at my Kitty’ as shown in Figure 16) but before the ‘second indication’ (i.e. ‘So Cute! Whats her name?’).” Pet. 48.

Petitioner also argues that “to the extent claim 4 requires outputting the timestamps on a different vertical plane than their corresponding messages, this is disclosed by Erickson.” Pet. 56 (citing Ex. 1007, 75).

d. Patent Owner Arguments

We consider Patent Owner’s arguments in the order presented.

*i. Outputting a Timestamp “Responsive To”
 Detecting a Resumption Message*

Patent Owner first argues that, for claim 4, “the claimed ‘outputting’ of a time stamp representative of the second time does not encompass outputting a time stamp invariably with every input message, but instead must be performed ‘responsive to’ a specific and tailored condition—said detecting ‘a resumption message.’” PO Resp. 29. This argument is unavailing because it is based on Patent Owner’s construction of the claim as excluding systems that output time stamps for all messages, which we do not adopt for the reasons articulated above.

Patent Owner also argues that the Petition improperly “assume[s] the Crawford/Watson combination discloses the step of detecting a “resumption message” merely because the second message at 3:12PM “could” be the claimed resumption message.” PO Resp. 30 (emphasis in original). This is not persuasive. In context, it is clear that Petitioner used “could” to indicate that the 3:12PM time stamp is one example of the second time stamp, not that the combination might or might not have second time stamps. Petitioner did not fail to meet its burden on that point.

ii. “Disposed Between”

Patent Owner also argues that claim 4 “does not merely recite that the time stamp is ‘disposed between’ any two messages, but instead must be disposed between the first indication of the first messaging communication and the second indication of the ‘resumption message’” and that “nothing in Erickson contemplates outputting the claimed time stamp in response to detection of a ‘resumption message.’” PO Resp. 33. This is a version of the

argument addressed immediately above and the claim construction arguments which, as explained, are not persuasive.

*iii. Determining That a Predetermined
Duration of Time Has Elapsed*

Patent Owner argues that “the Petition’s analysis of Stevens/Snader’s ‘keepalive timer’ relies upon a number of factual and legal errors regarding the claimed ‘determining’ step.” PO Resp. 35.

Patent Owner first argues that “Stevens and Snader detect how long a TCP connection has been idle” but “in Crawford’s system, the time elapsed since a TCP connection was idle is not the same as the claimed time that has elapsed ‘since the first time without additional communication between the electronic device and the second electronic device during that duration of time.’” PO Resp. 35–36. “For example,” argues Patent Owner, “a first message could be transmitted from a first user to a second user during an electronic conversation at a ‘first time,’ yet the TCP connection is not idle for the alleged ‘60 seconds’ . . . when the second user merely begins to type before then, which would result in continued use of the TCP connection because the first user’s device is updated to indicate the ‘buddy is typing’ on the second device.” PO Resp. 36. Patent Owner argues that “even if Crawford’s system was modified to include Stevens/Snader’s ‘keepalive timer,’ such a timer would cease tolling when either user merely begins to type and would restart after the typing ceases—regardless of when the additional communication in the conversation from the second user is actually sent between the client devices.” PO Resp. 37. Patent Owner concludes that the combination would not satisfy the “determining” step because “the duration of time calculated by such a ‘keepalive timer’ would

have a value different from the claimed duration of time elapsed ‘since the first time without additional communication between the first electronic device and the second electronic device during that time.’” *Id.*

We are not persuaded. There is nothing in the claim that would require the “duration of time calculated by [the] ‘keepalive timer’” to be the same as the time between messages. In the system contemplated by the Petition, a first message would be sent, the keepalive or heartbeat timer would begin to count, and, if nothing was sent within the preset duration of the timer, the system would “determin[e] that a predetermined duration of time has elapsed since the first time without additional communication between the electronic device and the second electronic device during that duration of time,” as claimed, and send a probe. Because of the way claim 1 is structured, the determination of an amount of elapsed of time has no connection to the remaining steps in the claim.⁷

Patent Owner offers a “second reason that the duration of time calculated by that Stevens/Snader ‘keepalive timer’ would have a value different from the claimed duration of time,” namely that “Snader teaches that the keepalive timer is not started simply when the purported first instant message is transmitted, but instead is started only after the second/receiving device provides an acknowledgement back.” PO Resp. 37. Patent Owner argues that because “the start of the keepalive timer is not contemporaneous with the first messaging communication and would occur at a later time only

⁷ See Decision 10–11 (explaining that the applicant claimed checking for the expiration of a certain period of time after a first message but did not include in the claim a subsequent step of outputting the time of that non-responded-to message, i.e., outputting a time stamp representative of the first time).

after the second device receives the first messaging communication and subsequently transmits an acknowledgement,” the timer “would not correspond to the elapsed time ‘since the first time’ when the first messaging communication occurred” as claimed. PO Resp. 38.

We find this argument unpersuasive because it is inconsistent with how TCP/IP operates. Specifically, we do not agree with Patent Owner that the “first communication” is concluded before the ACK that would start the keepalive timer is sent. Instead, we agree with Petitioner’s expert, Dr. Chatterjee, that the skilled artisan “would have understood the ‘ACK’ signal in TCP to be an integral part of the ‘messaging communication.’” Ex. 1031 ¶ 37. As Dr. Chatterjee explains, “[a] sending device in TCP relies on the ACK signal to determine that the recipient received the packet, and thus, that retransmission is not required” and “[t]he transmission of ACKs by the recipient is part of the end-to-end process of reliably communicating data using TCP.” *Id.* ¶ 38; *see also id.* ¶¶ 39–40. The “first messaging communication” is not complete until the sender knows that the message has received—until then, the sender is waiting to possibly resend the message.

We conclude that, in the system contemplated by the combination, the keepalive time would start after the ACK is received, and, if the next communication did not come until after the keepalive time expires, the system would “determin[e] that a predetermined duration of time has elapsed since the first time without additional communication between the electronic device and the second electronic device during that duration of time,” as claimed.

iv. Motivation to Combine

Patent Owner argues that Petitioner has not shown that one of ordinary skill would have been motivated to modify Crawford's instant messaging system to include determining that a predetermined duration of time has elapsed without additional communication. *See* PO Resp. 41.

First, Patent Owner argues that "the instant messaging system under the combination of Crawford and Watson would display a timestamp with every instant message" and that "a POSITA implementing Crawford/Watson would have recognized the stated preferences of those systems and why those preferences render the proposed 'keepalive timer' modification redundant and wastefully unnecessary." PO Resp. 42. Patent Owner argues that the "Petition had a burden to explain adequately why such a modification to Crawford and Watson "would have been an improvement on what [the primary system] already provides," but no such showing was provided." *Id.*

This argument is unpersuasive because the Petition *did* provide a reason, which Patent Owner identifies two pages later in the Response:

Petitioners theorized that a POSITA would have been motivated to "adapt the instant message system of Crawford to detect whether the TCP connection between the two devices has been idle or inactive for a specified period of time" because "[t]his would have allowed the client to determine whether the idleness of the connection was attributable (1) to a lack of communications in the IM conversation, or (2) a disruption in the actual communication link between two clients."

PO Resp. 44 (citing Pet. 41–42; Ex. 1002 ¶¶ 103–104). The keepalive timer would allow the client to determine that the connection was lost, allowing

the client or user to take corrective action. Crawford and Watson did not provide such functionality.

Next, Patent Owner argues that “the Petition never sufficiently demonstrated why a POSITA would have been motivated to look toward Stevens and Snader in the context of Crawford’s client-to-client AOL instant messaging system—especially where Stevens and Snader describe “server applications” and are wholly unrelated to outputting time stamps in any electronic conversation.” PO Resp. 43.

This argument is unpersuasive. As Petitioner argues, “[b]oth sides’ experts agree that these techniques could be implemented between two ‘client’ computers.” Pet. Reply 20 (citing Ex. 1031 ¶ 47; Ex. 1002 ¶ 98 n.8; Ex. 1032 at 50:22–52:7, 56:11–20). And, as Petitioner also argues, Patent Owner’s contention is based on the idea that the sender and receiver are both clients that communicate through a server, but that is not necessarily the case in TCP/IP, where “‘server’ simply refers to the TCP endpoint that initiated a TCP connection, and ‘client’ to the TCP endpoint that accepted that connection.” Pet. Reply 20–21 (citing Ex. 1031, ¶ 45; Ex. 1005, 20). In addition, Snader specifically suggests “implementing [the heartbeat] in the application.” *See* Ex. 1005, 95–97.

Patent Owner then argues that “the foundation for Petitioners’ theory is that Crawford’s instant message client actually needs to determine a cause of inactivity, but this foundation is unsupported by evidence and make[s] little sense in light of Crawford’s original solution.” PO Resp. 44. According to Patent Owner, there is no “evidence demonstrating why Crawford’s instant message client actually needed to determine the cause of inactivity.” *Id.* at 44.

We disagree with this argument too. The question is not whether the modification was “needed,” but rather whether there is an identified benefit that would have motivated the skilled artisan to make the change. Petitioner has identified advantages that would have motivated the combination. *See, e.g.*, Pet. 41–42 (explaining that the keepalive “would have allowed the client to “determine whether the idleness of the connection was attributable (1) to a lack of communications in the IM conversation, or (2) a disruption in the actual communication link between two clients”); Ex. 1002, ¶¶ 103–104.

Patent Owner further argues that “both Stevens and Snader provide multiple and explicit reasons not to use these mechanisms for detecting a lost connection,” namely that “(1) they can cause perfectly good connections to be dropped during transient failures, (2) they consume unnecessary bandwidth, and (3) they cost money on an Internet that charges by the packet.” PO Resp. 45–46 (quoting Ex. 1006, 75; citing Ex. 1005, 94). According to Patent Owner, “[t]he Petition ignored this contrary evidence in Stevens/Snader,” erroneously considered only its unsupported assumptions “in a vacuum,” and “[s]uch legal error cannot be adopted.” *Id.* at 46.

We agree that the art describes some disadvantages to the use of a keepalive timer. However, in the absence of a persuasive argument from Patent Owner that the disadvantages rise to the level of teaching away, we find them to be tradeoffs that the skilled artisan would weigh in implementing the keepalive timer. One would have needed to decide, in particular, if the advantages of knowing that the connection was lost was outweighed the possible drawbacks. But the mere fact that a modification includes negative effects is not alone sufficient to preclude a combination. Stevens and Snader identify some problems associated with the use of

keepalives timers, but do not teach away from using them. *See DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (“A reference does not teach away . . . if it merely expresses a general preference for an alternative invention but does not ‘criticize, discredit, or otherwise discourage’ investigation into the invention claimed.”) (quoting *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004)).

Finally, Patent Owner argues that “the law mandates an ‘especially strong’ inference of ‘nonobviousness’ where the primary reference’s original solution undermines the very reason being proffered as to why the primary reference should be modified.” PO Resp. 46 (citing *DePuy*, 567 F.3d at 1326). Specifically, Patent Owner asserts that “Crawford already provided a mechanism that reports to the first user when the second user is typing a message, thus confirming that the connection is active in a timely manner consistent with the real-time, conversational nature of Crawford’s instant messaging.” PO Resp. 47. Patent Owner argues that “Crawford’s original solution already enabled the user to recognize[] when there is a lack of incoming messages because any potential messages would have been signaled by the ‘typing’ indicator and the ‘typing’ icon before any such messages were actually.” *Id.*

We do not agree with this argument because, as explained above, the keepalive timer would provide an advantage that that typing indicator and typing icon would not. The indicator and icon would tell one party that the other was connected and in the process of typing something, but would not distinguish between silence resulting from the other party not responding and silence resulting from a lost connection. Nor would they allow the client/user to proactively correct a connection problem. There is no

“original solution” in Crawford or Watson that “undermines the very reason being proffered as to why the primary reference should be modified,” as Patent Owner argues.

e. Conclusion on Grounds 1 and 2

We find that Petitioner has shown how the combination of Crawford, Watson, Stevens, Snader, and Erickson teaches the limitations of claim 4, that the combination of these references is supported with sufficient motivations to combine, and that Patent Owner’s arguments against the combination are not persuasive. We conclude, therefore, that Petitioner has shown by a preponderance of the evidence that claim 4 was unpatentable.

Claims 8 and 12 correspond to claim 4, and the parties do not argue them separately. We conclude, for the reasons explained above in connection with claim 4, that Petitioner has also shown by a preponderance of the evidence that claims 8 and 12 were unpatentable.

2. Grounds 3 and 4: Crawford, Watson, and Missig

For Grounds 3 and 4, the Petition again relied on Crawford and Watson, but substituted Missig for Stevens and Snader. *See* Pet. 59–75.

Petitioner argued that Missig discloses the step of “determining that a predetermined duration of time has elapsed” because it “explains that ‘whenever there is a gap of about 5 minutes or so . . . a new timestamp is printed.’” Pet. 66. According to Petitioner, “[b]ecause Missig indicates that a ‘gap of about 5 minutes or so’ is always used (‘whenever’) in determining whether to print a new timestamp, a person of ordinary skill in the art would have understood ‘about 5 minutes or so’ to be a predetermined duration. *Id.* (citing Ex. 1002 ¶ 152) (emphasis omitted). Petitioner contends that the

skilled artisan would have “understood the ‘gap of about 5 minutes or so’ to describe a duration of time [that] elapse[s] since the first time without additional communication between the electronic device and the second electronic device during that duration of time,” and that “[i]t would also have been obvious that in order for the software to respond and output a timestamp . . . the software would need to be able to determine that this duration of inactivity has in fact occurred.” *Id.* at 67.

In the Institution Decision, we observed that “[a]lthough Missig evidently does show determining that a predetermined time has elapsed (e.g., 5 minutes) and then displaying a timestamp, the figures suggest the determination is simply that the predetermined time has passed since the first time, not ‘since the first time without additional communication between the electronic device and the second electronic device during that duration of time.’” Decision 31.

In the Reply, Petitioner argues that “[a] person of ordinary skill would have interpreted Missig’s reference to ‘a gap of 5 minutes or so’ to refer to a gap in the conversation, not the mere passage of time untethered to the existence of communications. Pet. Reply 24 (citing Ex. 1031 ¶ 53). Petitioner’s expert argues that “[a] ‘gap’ generally refers to a break in something, such as a break in continuity,” and that “since Missig describes an ongoing chat conversation, any ‘gap’ would be with respect to a break in conversation activity.” Ex. 1031 ¶ 53.

We find Petitioner’s arguments insufficient to carry its burden of proving unpatentability in view of Crawford, Watson, and Missig by a preponderance of the evidence

The key figure from Missig is reproduced below:



An Apple iChat Window as Depicted in Missig

Ex. 1008, 2. This shows that the system displayed a first timestamp, 19:55, then two red messages by one person, then a grey response, then another red message, and then a second time stamp, 20:00. We fail to see how this supports “determining that a predetermined duration of time has elapsed since the first time without additional communication between the electronic device and the second electronic device during that duration of time.” If the “first time” is that of the first red message, 19:55, the second timestamp, 20:00, is displayed despite the existence of several intervening communications and it thus cannot be a “time [that] has elapsed since the first time without additional communication.” On the other hand, if the “first time” is the time of the second red message, or third red message (so there are no intervening messages), there is no basis to conclude that Missig’s “gap of 5 minutes or so” starts with that message and, instead the sequence strongly suggests that the interval between the second or third red messages and the second time stamp would be less than five minutes.

We thus find that Petitioner has not shown that dependent claims 4, 8, and 12 would have been obvious in view of Crawford, Watson, and Missig. Because we find Missig substantively insufficient, we do not reach the argument about its status as a printed publication.

III. CONCLUSION

Claims 4, 8, and 12 have been shown to be unpatentable. The results are summarized below.

Claims	35 U.S.C. §	Reference(s)/Basis	Claims Shown Unpatentable	Claims Not Shown Unpatentable
4, 8, 12	103	Crawford, Watson, Stevens, Snader, Erickson	4, 8, 12	
4, 8, 12	103	Crawford, Watson, Missig		4, 8, 12
Overall Outcome			4, 8, 12	

IV. ORDER

For the reasons given, it is:

ORDERED that claims 4, 8, and 12 of U.S. Patent 8,301,713 B2 have been shown to be unpatentable;

FURTHER ORDERED that, because this is a Final Written Decision, the parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.⁸

⁸ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner's attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

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