

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

META PLATFORMS, INC.¹,
Petitioner,

v.

WRINKL, INC.,
Patent Owner.

IPR2021-00883
Patent 10,728,192 B2

Before NEIL T. POWELL, PATRICK M. BOUCHER, and
JULIET MITCHELL DIRBA, *Administrative Patent Judges*.

POWELL, *Administrative Patent Judge*.

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

Denying-in-Part and Dismissing-in-Part Patent Owner's Motion to Strike
37 C.F.R. § 42.5

¹ Since filing its Petition, Petitioner changed its name from Facebook, Inc. to Meta Platforms, Inc. Paper 7, 1.

I. INTRODUCTION

A. BACKGROUND

Meta Platforms, Inc. (“Petitioner”) filed a Petition for *inter partes* review of claims 1–9, 11–20, 22–28, and 30 of U.S. Patent No. 10,728,192 B2 (Ex. 1001, “the ’192 patent”). Paper 2 (“Pet.”). Wrinkl, Inc. (“Patent Owner”) filed a Preliminary Response. Paper 6 (“Prelim. Resp.”). Pursuant to 35 U.S.C. § 314, we instituted an *inter partes* review of claims 1–9, 11–20, 22–28, and 30 of the ’192 patent. Paper 9 (“Institution Decision” or “Inst. Dec.”).

After institution, Patent Owner filed a Response (Paper 16, “PO Resp.”), to which Petitioner filed a Reply (Paper 26 “Pet. Reply”), and Patent Owner thereafter filed a Sur-reply (Paper 30, “PO Sur-reply”).

Additionally, pursuant to our authorization (Ex. 3002), Patent Owner filed a Motion to Strike. Paper 34 (“Motion” or “Mot.”). Petitioner filed an Opposition to Petitioner’s Motion to Strike. Paper 35 (“Opposition” or “Opp.”).

A consolidated oral hearing for this proceeding and IPR2021-00882 was held on September 20, 2022. Paper 41 (“Tr.”).

We have jurisdiction under 35 U.S.C. § 6. This Decision is a final written decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons below, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–9, 11–20, 22–28, and 30 are unpatentable.

B. RELATED PROCEEDINGS

The parties note that the ’192 patent is involved in *Wrinkl, Inc. v. Facebook, Inc. et al.*, Case No. 1:20-cv-01345-RGA (D. Del. Oct. 2, 2020). Pet. 2; Paper 4, 1. Patent Owner also notes that a related Patent is

challenged in IPR2021-00882. Paper 4, 1. In IPR2021-00882, U.S. Patent No. 9,860,198 B1 (“the ‘198 patent”) is challenged. IPR2021-00882, Paper 2, 1; IPR2021-00882, Ex. 1001. The ’192 patent claims priority to the patent application from which the ’198 patent issued. Ex. 1001, code (63).

C. THE ’192 PATENT

The ’192 patent relates to management of computer messaging. Ex. 1001, 1:19–20. A computer messaging “conversation” between multiple users can involve many messages exchanged over the course of “hours, days, or even years.” *Id.* at 1:42–46. “[T]he chat message session may simulate a real-life conversation.” *Id.* at 3:59–60. Over the course of a session, the topic may have changed many times. *Id.* at 3:11–20. “This makes it difficult for a user to post a response to a previous message that is within context of the ongoing message conversation.” *Id.* at 3:20–22.

Accordingly, when sending a new message, a user may include information clarifying which earlier message the user is addressing. *Id.* at 4:2–13. For example, the new message may include a copy of the earlier message, the author of the earlier message, the date and/or the time of the earlier message, or something else unique about the earlier message. *Id.* The ’192 patent describes this approach as problematic, noting limited message space and possible omission of important information. *Id.* at 4:13–20.

The ’192 patent’s “invention relates . . . in particular to the ability of one message to reference another message.” *Id.* at 2:42–44. The ’192 patent elaborates that

[b]y “reference” what is meant is that there is a connection between the second message and the first message. The connection may be for example a link. With such a link, while

the second message is being viewed, some aspect of the first message may also be viewed. The aspect of the first message may be, for example, all of the first message, part of the first message, a modified form of all or part of the first message, and/or data associated with the first message. Exemplary associated data may include a user (or some form of identification of the user) associated with the first message, a date and/or time associated with the first message, Gucci and/or some other data associated with the first message.

Id. at 4:25–37.

The '192 patent discloses an example using a “reference object” and a “display object” to allow a second message to reference a first message.

Id. at 4:38–5:4. The '192 patent discloses one embodiment in connection with Figures 8A–8D. Figure 8B is reproduced below.

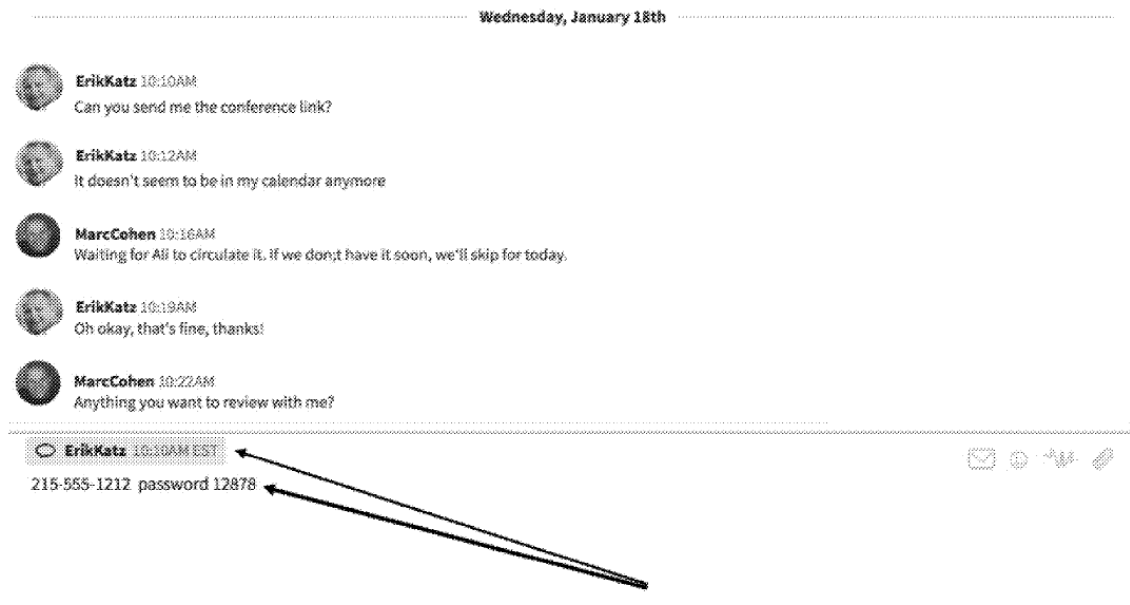


Figure 8B

Figure 8B is a screenshot of a computer-messaging conversation between ErikKatz and MarcCohen, showing multiple messages they have exchanged. *Id.* at 2:9–11, 10:28–44, 11:22–23.

At the stage shown in Figure 8B, the two users have exchanged a series of messages. *Id.* at 10:31–44, 11:22–23. ErikKatz asked “[c]an you send me the conference link?” in the first message of the conversation. *Id.* at 10:39–41. MarcCohen wishes to respond to this first message. *Id.* at 10:38–41. Given that four intervening messages have been sent, a question arises: how MarcCohen can respond to the first message without confusion? *Id.* at 10:44–46. Copying the first message into a response may undesirably “entail multiple steps including highlighting, selecting, copying, selecting and pasting.” *Id.* at 10:46–53.

The '192 patent discloses an alternative approach. Specifically, when a user makes a selection in connection with the first message, a reference

object is inserted automatically into the message system's text entry bar. *Id.* at 4:53–56. In the example of Figure 8B, selecting the object “10:10 AM” within the first message triggers insertion of the reference object “ErikKatz 10:10 AM EST” into the text entry box. *Id.* at 11:1–3, 11:22–26. “The reference object may provide a link to automatically identify and access data from the first message.” *Id.* at 4:56–58. The user may add text before or after the reference object in the text entry bar. *Id.* at 4:58–59, 11:51–53.

After the user has triggered insertion of the reference object and finished adding text, the user may send the message. *Id.* at 11:60–63. An example appears in Figure 8C, which is reproduced below.

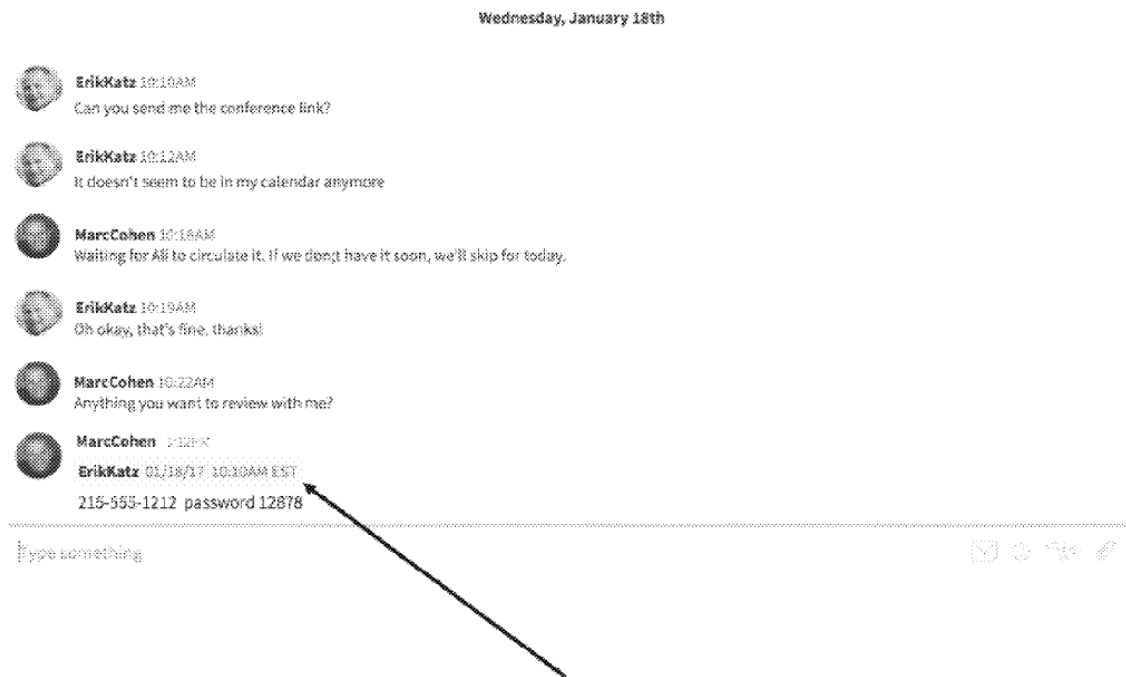


Figure 8C

Figure 8C shows the conversation after MarcCohen has transmitted his reply to ErikKatz's message. *Id.* at 11:60–65.

“When the message is sent, a display object associated with the first message is included in the newly posted second message.” *Id.* at 4:59–61. In Figure 8C, for example, “the reference object has been replaced with a display object” in MarcCohen's reply message at the end of the conversation. *Id.* at 11:64–67. The “‘display object’ . . . references the first message.” *Id.* at 4:41–43.

The display object may be activated. *Id.* at 5:5–6. “For example, by hovering over and/or selecting the display object, text data (or other data or portions thereof) associated with the referenced first message may be displayed (e.g., above, to the side of, below) with respect to the newly posted message.” *Id.* at 5:6–10. The reader gets useful context by seeing the referenced message. *Id.* at 5:10–13. An example appears in Figure 8D, which is reproduced below.

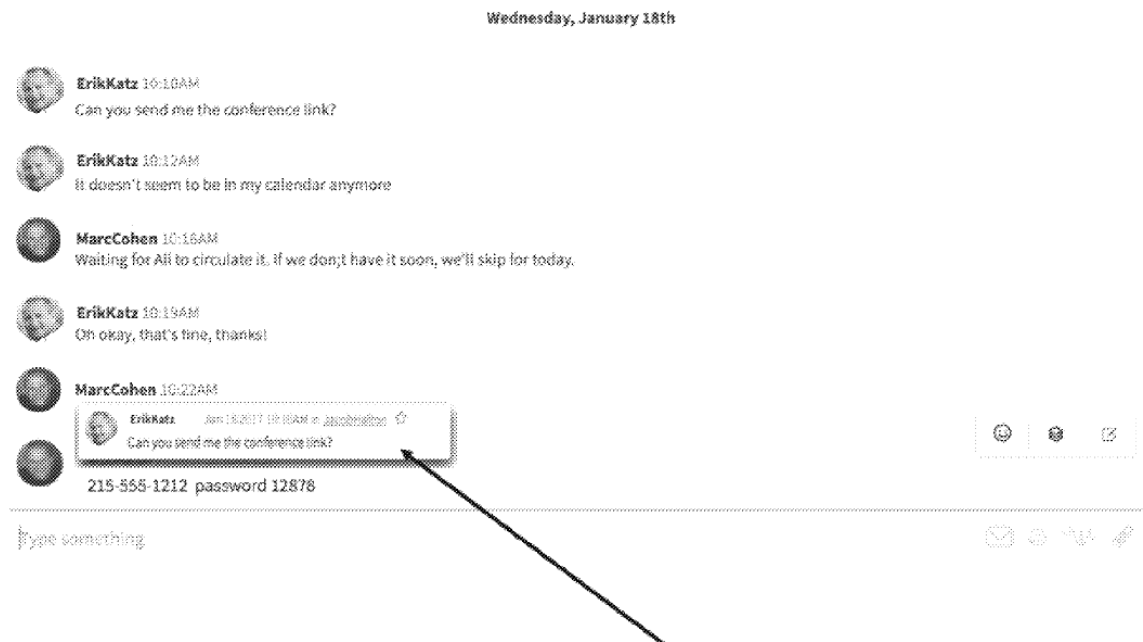


Figure 8D

Figure 8D shows that “[b]y selecting the display object, the 1st message (or portion thereof, or data associated therewith) may appear on the screen.”

Id. at 12:12–14.

In another example, “a user can ‘jump’ to the original referenced message (and thus locate and change a display to the original placement of a message within a stream of messages).” *Id.* at 16:10–13. “In some cases, the user may click on hypertext or another object and that object will launch an action such as a jump to the original message (e.g., the message being referenced).” *Id.* at 16:17–20.

According to the ’192 patent, “computer processing efficiency is improved through the use of links and without simply duplicating previously inputted data. Efficiency is also improved by enabling access to at least a portion of previously available data without a need to manually locate the previously available data.” *Id.* at 4:66–5:4.

D. ILLUSTRATIVE CLAIM

Of the challenged claims, claims 1, 16, and 24 are independent. Each of claims 2–9, 11–15, 17–20, 22, 23, 25–28, and 30 depends from one of claims 1, 16, and 24. Claim 1 is illustrative and is reproduced below with certain reformatting:²

1. [1[pre]] A method for operating a messaging device, said method comprising the steps of:

[1[a]] displaying to a first user, on a display of said device, a window displaying at least a portion of a stream comprising graphical message display objects, each graphical message display object displayed in said window occupying a respective displayed area having a boundary and one or more

² We have added the same numbers used by the Petition to identify each of claim 1’s limitations.

fixed graphical elements displayed therein, wherein said window is associated with a predefined plurality of users of a messaging system, said plurality including said first user, and wherein at least a subset of the display objects in said stream represent respective messages of a chat message session between those users;

[1[b]] directly responsive to receiving, through a user interface of said device, a single click or touch screen gesture that interacts with at least one of said fixed graphical elements displayed within the boundary of a first one of said displayed graphical message display objects:

[1[c]] displaying, on said display and in conjunction with display of a message creation interface including a text entry box, a reference indication indicating a reference to said first one of said displayed graphical message display objects;

[1[d]] while said message creation interface is displayed, continuing to display at least a portion of said stream in said window, and enabling the device to respond to clicks or touch screen gestures that interact with at least one other of said graphical message display objects in said stream; and

[1[e]] in response to receiving further user input through said message creation interface during display of said reference indication:

[1[f]] displaying, in said window, a new graphical message display object based on said further user input and in association with a graphical reference to a message associated with said first one of said displayed graphical message display objects; and

[1[g]] transmitting, to at least one of said predefined plurality of users, a message based on said further user input, and a reference to said message associated with said first one of said displayed graphical message display objects; and

[1[h]] making said device responsive to a click or touch screen gesture interacting with said graphical reference to provide

a further display indicating content of said message represented by said graphical reference.

Ex. 1001, 19:23–20:2.

E. ASSERTED GROUNDS OF UNPATENTABILITY

Petitioner challenges the patentability of claims 1–9, 11–20, 22–28, and 30 of the ’192 patent on the following grounds (Pet. 4):

Claim(s) Challenged	35 U.S.C. §	Reference(s)/Basis
1–9, 11–20, 22–28, 30	103 ³	Ji ⁴ , Sarafa ⁵ , Oh ⁶

In support of Petitioner’s challenges, the Petition relies on a first Declaration of Andrew Cockburn, Ph.D. Ex. 1003. Patent Owner relies on a Declaration of Kevin C. Almeroth, Ph.D. Ex. 2004. In connection with its Reply, Petitioner relies on a second Declaration of Dr. Cockburn. Ex. 1018.

II. PATENT OWNER’S MOTION TO STRIKE

In the Motion to Strike,

Patent Owner moves to strike two new theories improperly raised for the first time in Petitioner’s Reply: (1) the argument at subsection 2 on page 9 of Petitioner’s Reply (and the cited paragraphs from Dr. Cockburn’s supplemental declaration in

³ The Leahy-Smith America Invents Act (“AIA”), Pub. L. No. 112-29, 125 Stat. 284, 287–88 (2011), revised 35 U.S.C. § 103, effective March 16, 2013. Because the application from which the ’192 patent issued was filed after that date, with no benefit claim prior to that date, the AIA version of § 103 applies.

⁴ Ji et al., Chinese Patent Application Publication No. CN 105553834 A, published May 4, 2016 (Ex. 1005 (original publication), Ex. 1006 (certified English translation), “Ji”).

⁵ Sarafa et al., Published U.S. Patent Application No. 2018/0159812 A1, published June 7, 2018 (Ex. 1007, “Sarafa”).

⁶ Oh et al., Published U.S. Patent Application No. 2014/0143684 A1, published May 22, 2014 (Ex. 1008, “Oh”).

support), and (2) the argument presented in the full paragraph on page 20 of Petitioner's Reply (and the cited paragraphs from Dr. Cockburn's supplemental declaration in support).

Mot. 1. Petitioner opposes. Opp. 1

A. SUB-SECTION 2 ON PAGE 9 OF REPLY

This portion of Petitioner's Reply argues "Ji in view of Sarafa teaches" the "reference" recited in the challenged claims. Reply 9 (citing Ex. 1018 ¶¶ 37–38). These arguments improperly deviate from the Petition's arguments addressing the claimed "reference," Patent Owner contends. Mot. 1–5. Patent Owner asserts that "[t]he Petition mapped the transmitted 'reference of limitation 1[g]16[i]/24[g] to the text of a quoted message: 'Ji discloses transmitting . . . a message (e.g., the reply message) . . . and a reference (e.g., the **"Happy New Year!"** text)' *Id.* at 1. Patent Owner adds that "[t]he Petition further noted that in Sarafa 'the **screen area of the display** of the quoted message may comprise a touch-screen control' and mapped this 'touch screen control' to the interactive aspect of the '192 Patent's claimed 'graphical reference.'" *Id.* at 2.

Patent Owner further argues that

[b]ecause the transmitted quoted content (displayed on the receiving device "Quoted Portion 360") and the "touch screen control" on the screen of the receiving device at the location of "Quoted Portion 360" do not meet the transmitted "reference" limitation of 1[g]/16[i]/24[g], Petitioner in Reply presents its new "quoted message identifier" argument.

Id. Patent Owner adds that "the Petition does **not** map Sarafa's 'quoted message identifier' to any limitation in claim 1, let alone the 'reference' or 'graphical reference' limitations." *Id.*

Patent Owner contends that the arguments in sub-section 2 on page 9 of the Reply do not respond to Patent Owner's Response. *Id.* at 3–5. Noting

that “[t]he Reply suggests that the new ‘quoted message identifier’ theory is in response to Patent Owner’s ‘claim construction,’” Patent Owner argues that “[t]his is wrong.” *Id.* Patent Owner explains that it “is using the express definition of the term ‘reference’ found in the ’192 patent,” which “was no surprise to Petitioner.” *Id.* at 3. “Petitioner was well aware of this express definition, and, in fact, **quoted it** in the claim construction section of the Petition filed on the same day in the co-pending -00882 proceeding,” Patent Owner asserts. *Id.*

At the hearing, Patent Owner also asserted that it would suffer undue prejudice if we do not grant its Motion to Strike. Tr. 113:24–114:3. In particular, addressing Petitioner’s position on Sarafa’s quoted message identifier, Patent Owner argued that

we don’t have an opportunity to have Dr. Almeroth respond because they did not raise it in their petition. So again, I’ll always come back to, sounds like there’s certainly undue prejudice to patent owner in that we have no way to give an expert response to this extremely brand new argument that was not raised in the petition.

Id.

In the Opposition, Petitioner contends that the arguments in its Reply properly responded to Patent Owner’s proposed claim construction of “reference.” Opp. 2–3. Petitioner explains that the Reply first disputed Patent Owner’s claim construction, then argued that the cited prior art meets even Patent Owner’s proposed construction. *Id.* at 2. Asserting that “[Patent Owner] now argues that Petitioner should have anticipated its flawed construction of ‘reference’ and preemptively addressed it in the Petition,” Petitioner disputes Patent Owner’s assertion that Patent Owner “is using the express definition of the term ‘reference’ found in the ’192 patent” *Id.*

Petitioner also argues that its arguments in the Reply regarding Sarafa’s “quoted message identifier” properly elaborate on arguments in the Petition. *Id.* at 3–4. Petitioner argues that “[t]he Petition identified Sarafa’s reply message with a quoted portion as disclosing a ‘reference.’” *Id.* at 3 (citing Pet. 50–53). Petitioner adds that

[a]s explained in the Reply, Sarafa’s quoted message identifier is part of the quoted message portion *of that same reply message*. Reply 9. Thus, the Reply presents no change to the asserted combination, or even the components of that combination. It merely presents additional detail in response to PO’s proposed construction of “reference.”

Id. at 4.

We do not agree with Patent Owner that the arguments in subsection 2 on page 9 of Petitioner’s Reply are improper new arguments. Rather, we find these arguments properly elaborate on the Petition, in response to the proposed construction of “reference” in Patent Owner’s Response. Although we agree with Patent Owner that the Petition does not use the phrase “quoted message identifier” when addressing claim 1, Sarafa explains that the quoted message cited in the Petition and the “quoted message identifier” are part of the same message package. *E.g.*, Ex. 1007 ¶ 83. Patent Owner contends that Petitioner’s citation of the quoted message in the Petition and then the quoted message identifier in the Reply is like

if I have a patent to some kind of car and someone points to a Porsche and says, look, the Porsche has an engine, and then we argue about an engine, and then they come back and say, well, we’re referring to the turbo charger in the engine in their reply, even though they never mention turbo charger, and said that’s the key, it’s like, well, we weren’t on notice of that.

Tr. 71:2–9. We find this unpersuasive. Patent Owner does not explain why a reply that cites a subcomponent of an item cited in the petition would necessarily go beyond properly elaborating on the arguments in the petition.

Also, we find unpersuasive Patent Owner’s suggestion that Petitioner should have anticipated Patent Owner’s proposed claim construction and addressed it in the Petition. Mot. 3–4. The “express definition” that Patent Owner refers to states that “[b]y ‘reference’ what is meant is that there is a connection between the second message and the first message.”

Ex. 1001, 4:25–27. Rather than resting its patentability arguments on this “express definition,” Patent Owner further defines the definition, arguing that “[t]he connection described in the patents allows the software to locate a message based on information sent with another message that contains ‘reference.’” PO Resp. 9–10. Patent Owner does not persuade us that Petitioner should have anticipated Patent Owner would further define the “express definition” of reference.

Additionally, we disagree with Patent Owner’s suggestion that it will suffer unfair prejudice unless we grant its Motion to Strike. As noted above, Patent Owner argues that Dr. Almeroth did not have a chance to address the subject matter discussed in sub-section 2 on page 9 of Petitioner’s Reply, especially Petitioner’s arguments and Dr. Cockburn’s testimony about Sarafa’s quoted message identifier. Tr. 113:5–114:3. But Dr. Almeroth’s Declaration did address Sarafa’s quoted message identifier. Ex. 2004 ¶¶ 106–108.

Dr. Almeroth observed that our Institution Decision discussed Sarafa’s quoted message identifier. Ex. 2004 ¶ 106. Dr. Almeroth then testified that “Sarafa’s discussion of the ‘quoted message identifier’ is

insufficient to understand what it is and how it would relate to the challenged claims here.” *Id.* Given Dr. Almeroth’s testimony that he cannot discern from Sarafa’s discussion “what [the quoted message identifier] is and how it would related to the challenged claims,” we find unpersuasive Patent Owner’s argument that it will suffer undue prejudice because Dr. Almeroth did not have another opportunity to testify.⁷ Ex. 2004 ¶ 106.

In sum, Patent Owner does not persuade us that the facts of this proceeding warrant striking sub-section 2 on page 9 of Petitioner’s Reply.

B. FULL PARAGRAPH ON PAGE 20 OF REPLY

Our analysis of the parties’ patentability dispute does not rely on the full paragraph on page 20 of Petitioner’s Reply. Accordingly, we dismiss as moot Patent Owner’s motion to strike this portion of Petitioner’s Reply.

III. ANALYSIS

A. LEVEL OF ORDINARY SKILL IN THE ART

Petitioner contends that

[a] person of ordinary skill in the art (“POSA”) at the relevant time (early 2017) would have had a bachelor’s degree in

⁷ Moreover, to the extent Patent Owner believed additional testimony from Dr. Almeroth would have helped, Patent Owner could have asked to file such testimony. “Expert testimony may be submitted with the petition, preliminary response, and at other appropriate stages in a proceeding as ordered or allowed by the panel overseeing the trial.” Patent Trial and Appeal Board Consolidated Trial Practice Guide, 34 (Nov. 2019), *available at* <https://www.uspto.gov/sites/default/files/documents/tpgnov.pdf>. “Where a party believes it has a basis to request relief on a ground not identified in the rules, the party should contact the Board and arrange for a conference call with the Board and opposing party to discuss the requested relief with the judge handling the proceeding.” *Id.* at 75. Instead of asking to file additional testimony from Dr. Almeroth, Patent Owner only asked to file its Motion to Strike, and only after it had already filed its Sur-reply. Ex. 3002.

computer science or information systems and at least two years' industry experience in designing and/or implementing user interfaces, or equivalent education and experience. Cockburn Decl. ¶ 31. Alternatively, a skilled artisan could substitute directly relevant work experience with a higher level of education, e.g., an advanced degree such as a master's of computer science. *Id.*

Pet. 13.

Patent Owner contends that

[a] person of ordinary skill in the art (a “skilled artisan”) would have been a person with a bachelor's degree in information systems, electrical engineering, computer engineering, or computer science, as well as two or more years of relevant industry experience, which would include experience in communications systems and graphical user interfaces. More academic experience would compensate for less industry experience and more industry experience would compensate for less academic experience.

PO Resp. 25–26 (citing Ex. 2004 ¶¶ 55–57). Patent Owner adds that “[t]he level of skill proposed by Petitioner and proposed here appear similar, but not identical. Patent Owner does not believe the analysis provided by either party turns on which level of skill the Board ultimately adopts.” *Id.* at 26.

We find Petitioner's proposed definition reasonable and consistent with the prior art before us. *See In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (determining that the Board of Patent Appeals and Interferences did not err in concluding that the level of ordinary skill in the art was best determined by the references of record). Accordingly, we apply the level of skill identified by Petitioner. Additionally, we agree with Patent Owner that the level of skill it identifies differs very little from Petitioner's proposed level of skill, and our analysis below would be the same under either party's identified level of skill.

B. CLAIM INTERPRETATION

We apply the same claim construction standard used in district courts, namely that articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). See 37 C.F.R. § 42.100(b) (2020). In applying that standard, claim terms generally are given their ordinary and customary meaning as would have been understood by a person of ordinary skill in the art at the time of the invention and in the context of the entire patent disclosure. *Phillips*, 415 F.3d at 1312–13. “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). “[O]nly those terms need be construed that are in controversy, and only to the extent necessary to resolve the controversy.” *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999); *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (applying *Vivid Techs.* in the context of an *inter partes* review).

The Petition states that “[a]ll claim terms have been accorded their plain and ordinary meaning.” Pet. 14.

In its Response, Patent Owner proposes a construction for the claim term “reference.” PO Resp. 9. Patent Owner argues that

In the context of the invention, a “reference” between two messages provides a **connection** between those messages. The ’192 patent states “[b]y ‘reference’ what is meant is that there is a connection between the second message and the first message.” ’192 patent at 25-27. Almeroth at ¶¶59-63, 74-80.

The connection described in the patents allows the software to locate a message based on information sent with another message that contains the “reference.”

Id. at 9–10. In Petitioner’s Reply and Patent Owner’s Sur-reply, the parties further argue the proper construction of “reference.” Pet. Reply 2–6; PO Sur-reply 4–9. In view of our analysis below, resolving the parties’ patentability dispute does not require us to construe expressly “reference” or any other claim language.⁸

C. ALLEGED OBVIOUSNESS OVER JI, SARAFA, AND OH

1. *Overview of Ji*

Ji’s “invention relates to the real-time communication field, specifically, a message transmission method and device.” Ex. 1006 ¶ 1. According to Ji, “[m]essage overload’ has become a first element impacting the life and death of social network.” *Id.* ¶ 2. Noting that “information is abundant,” Ji explains that “[u]sers are unable to quickly locate the conversation messages, which require their attention, from the ‘overloaded messages’, which increases the costs of reading messages for user.” *Id.*

Ji discloses a method and device “to resolve the technical issue of the huge cost of message acquisition in related technologies.” *Id.* ¶ 4. Ji

⁸ In the hearing, Patent Owner argued that, unlike a name, an address constitutes a “link,” as recited in the claims of the related ’198 patent. Tr. 111:25–112:8. Patent Owner does not appear to argue that the term “reference” recited in the claims of the ’192 patent requires an address. *See generally* PO Resp.; PO Sur-reply; Tr. If Patent Owner had argued that the term “reference” recited in the claims of the ’192 patent requires an address, we would disagree for substantially the same reasons explained in our final decision for IPR2021-00882 that the claimed “link” of the ’198 patent does not require an address. As the parties agree, “link” is a type of “reference.” PO Resp. 12; Pet. Reply 4. Accordingly, given that “link” does not require an address, “reference” cannot, either.

discusses an embodiment in connection with Figure 2, which is reproduced below.

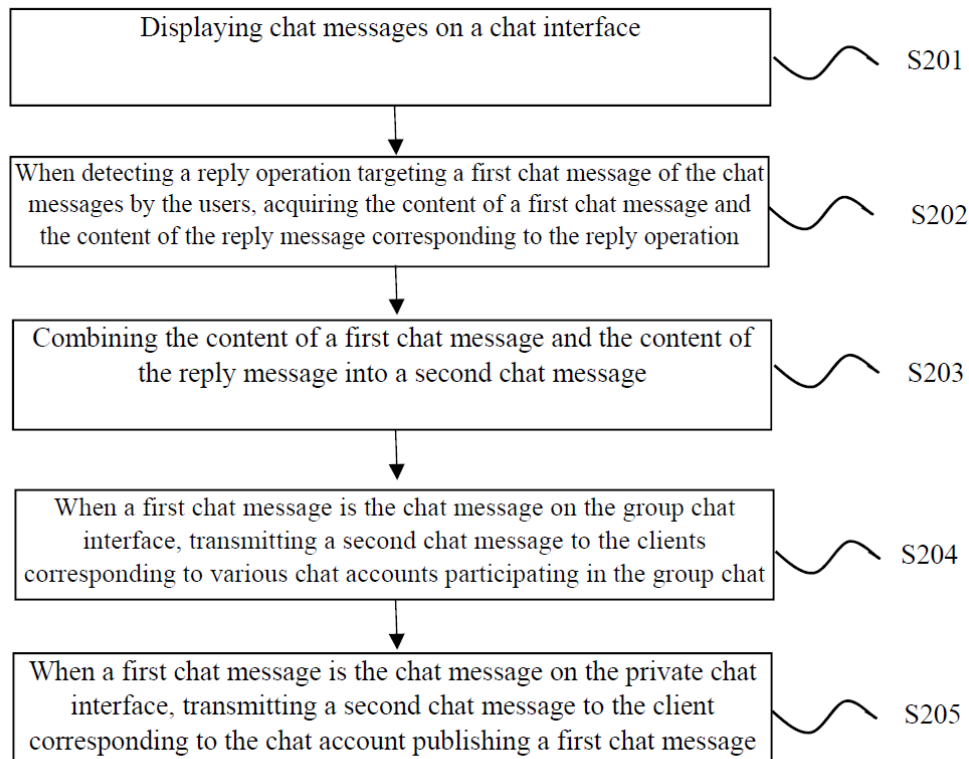


Figure 2

According to Ji, “Figure 2 is a flow chart of the message transmission method according to a first embodiment of the present invention.” *Id.* ¶ 10.

This method begins with “[s]tep S201, displaying chat messages on a chat interface.” *Id.* ¶ 40. The chat interface may be a private chat interface “with two participating chat accounts.” *Id.* ¶ 41. Alternatively, the chat interface may be a group chat interface “with at least three participating chat accounts.” *Id.*

After step S201, the method proceeds to step S202, which involves, “when detecting a reply operation targeting a first chat message of the chat messages by the users, acquiring the content of a first chat message and the

content of the reply message corresponding to the reply operation.” *Id.* ¶ 43.

Ji elaborates that

[o]ptionally, the reply operation of a first chat message comprises confirming a first chat message from a plurality of chat messages by a first client; the user locates a first chat message and then clicks the screen location corresponding to a first chat message. A first client receives a first touch signal generated by the clicking on the screen location corresponding to a first chat message by the user. After a first client receives a first touch signal generated by the clicking of the screen location corresponding to a first chat message by the user, a first client pops up a message operation bar. The message operation bar may display a plurality of operations on a first chat message, for example, displaying the “reply” operation. The “reply” operation is used to execute the operation to reply to a first chat message, and the “reply” operation pops up a message input dialog box, wherein the message input dialog box displays “reply + reply message”; the user directly inputs the content of the reply message in the message input dialog box to reply to a first chat message. Optionally, the reply operation of a first chat message comprises the following: after a first client receives a first touch signal generated from the screen location corresponding to a first chat message, a first client directly pops up a message input dialog box to then reply to a first chat message and thus acquires the content of a first chat message and the content of the reply message corresponding to the reply operation.

Id. ¶ 44.

Ji further discusses a client receiving a touch signal in connection with Figure 10, which is reproduced below.

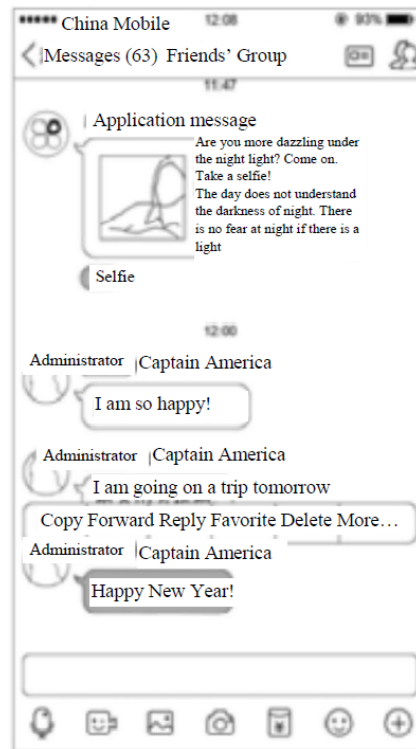


Figure 10

Ji explains that “Figure 10 is a screenshot of a first touch signal of a first chat message received by a first client according to an embodiment of the present invention.” *Id.* ¶ 95.

In Figure 10, the “first client displays the application messages, wherein there are a plurality of messages published by a first account ‘Captain America’, including ‘I am so happy!’, ‘I am going on a trip tomorrow’, and ‘Happy New Year.’” *Id.* Ji explains that

“I am going on a trip tomorrow” is confirmed to be a first chat message. The user terminal may execute the touch operation on the terminal screen corresponding to a first chat message of “I am going on a trip tomorrow. A first client receives a first touch signal via the “reply” menu. A first client displays the message

operation bar of a first chat message. The message operation bar is to display the menu of operations to be executed on a first chat message. The menu in the message operation bar comprises options, such as “copy”, “forward”, “reply”, “favorite”, “delete”, and “more”, for a first chat message; wherein, the “reply” option is selected; a second account may reply to a first chat message of “I am going on a trip tomorrow.”

Id.

Referring back to Figure 2, after step S202, the method proceeds to step S203, which involves “combining the content of a first chat message and the content of the reply message into a second chat message.” *Id.* ¶ 46. Ji explains that “after a first client receives a first touch signal of a first chat message, the user inputs the reply message.” *Id.* ¶ 47. Ji elaborates that “[a]fter receiving the reply message corresponding to a first touch signal, a first client combines the content of a first chat message and the content of the reply message into a second chat message.” *Id.*

Ji further discusses a client acquiring a reply message in connection with Figure 11, which is reproduced below.

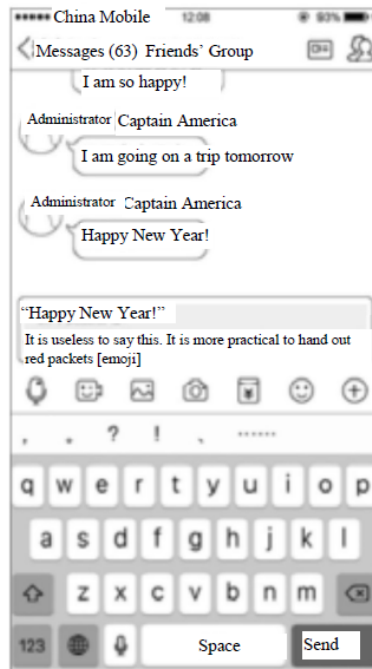


Figure 11

Ji states that “Figure 11 is a screenshot of a first reply message corresponding to a first touch signal acquired by a first client according to a first embodiment of the present invention.” *Id.* ¶ 96. Ji elaborates that

[a]s shown in Figure 11, a first client acquires a first reply message corresponding to a first touch signal. A first client displays the message receipt interface; wherein, the message receipt interface is to display the interface of the content of received messages and may comprise a keyboard to manually input messages and a message acquisition box; a first client receives a first reply message on the message receipt interface; for example, a first client replies via a second account “It is useless to say this. It is more practical to hand out red packets/emoji.”

Id.

Referring back to Figure 2, after step S203, the method involves step S204 or step S205. If the chat is on a group chat interface, the method

executes step S204. *Id.* ¶ 48. In step S204, “after the content of a first chat message and the content of the reply message are combined into a second chat message, . . . a second chat message is transmitted to the clients corresponding to various chat accounts participating in the group chat.” *Id.* ¶ 49.

If the chat is on a private chat interface, step S205 is executed. *Id.* ¶ 53. In step S205, “after the content of a first chat message and the content of the reply message are combined into a second chat message, . . . a second chat message is only transmitted to the client corresponding to a first chat message.” *Id.* ¶ 54.

Ji shows a reply message in Figure 12, which is reproduced below.

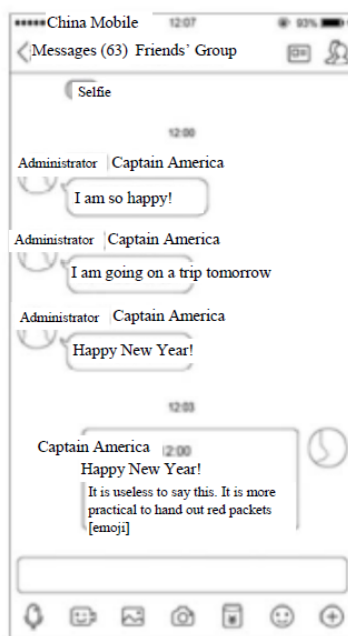


Figure 12

Ji explains that “Figure 12 is a screenshot of a first reply message corresponding to a first touch signal acquired by a first client according to a second embodiment of the present invention.” *Id.* ¶ 97. Ji elaborates that

[a]s shown in Figure 12, after a first client acquires a first reply message corresponding to a first touch signal, a first client

displays a first chat message “Happy New Year” and a first reply message “It is useless to say this. It is more practical to hand out red packets.”

Id.

Ji also addresses receipt of transmitted reply messages in connection with Figure 8, which is reproduced below.

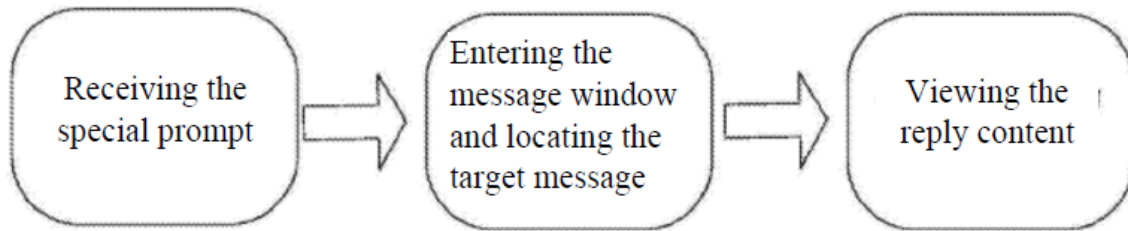


Figure 8

Ji explains that “Figure 8 is a process diagram of the message receipt according to an embodiment of the present invention.” *Id.* ¶ 92.

Ji elaborates that

[a]s shown in Figure 8, in the message group, if there is a reply message to the sent message, a special prompt can be received on the preset message interface; for example, a small red circle is displayed in the message group with a reply message; alternatively, vibration or ring or any combination of the means above may be used to prompt that there is a reply message to the messages sent by users. The user clicks the message group and enters another preset message interface, i.e., a message window; to make it convenient for the user to read and understand, the target message, i.e., a first chat message, is located in the message window; in the message group with a plurality of chat message, pages of a plurality of chat messages are scrolled up to the page of a first chat message; information, such as the portrait of the message replier, is displayed at the top right corner of the interface, as the trigger logo. After clicking the trigger logo, the user enters the preset message interface of the message prompt and is able to view all historic chat messages transmitted by the accounts of a second chat message and a first chat message.

Id.

2. *Overview of Sarafa*

Sarafa discloses that users posting to a message thread may incorrectly assume that the context of their messages will be understood by other users. Ex. 1007 ¶¶ 18–19. Accordingly, Sarafa notes, “a participant may add context to their message by quoting another message to which they are replying. This quote appears as part of the participant’s message and thereby communicates the context of the message.” *Id.* ¶ 19.

Sarafa elaborates that a sending client device may include the quoted message with the quoting message. *Id.* ¶ 22. In instances

[w]here a receiving client device for a quoting message has a local store of the quoted message it may incorporate that local store into its display of the quoted message. It may use the copy retrieved from the local store to retrieve the text, images, and/or other content of the message for display. It may also, where it has a local store of the quoted message, include a control in the display of the quoted message that, if selected, redirects the display of the message thread to the portion of the message thread history containing the quoted message.

Id. ¶ 23. This may “provid[e] additional context to users whose client device have the relevant messaging history, improving the user experience of quoted messages for [the messaging system’s] users.” *Id.*

Sarafa discusses an example in connection with Figure 3, which is reproduced below.

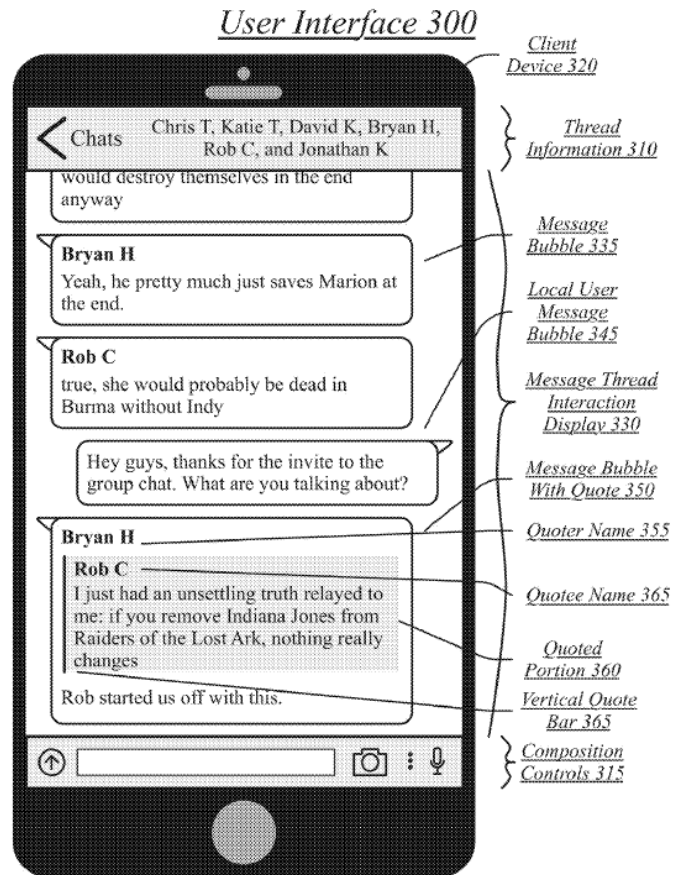


FIG. 3

Figure 3 “illustrates an embodiment of a user interface including messaging flow visualization.” *Id.* ¶ 65.

Specifically, Figure 3 shows user interface 300 with message thread interaction display 330. *Id.* ¶ 66. Message thread interaction display 330 may include one or more messages between users of the message thread. *Id.* “Each of the one or more messages may be represented by a particular message bubble, such as message bubble 335.” *Id.* ¶ 69. “A message that quotes another message may be presented as a message bubble with quote 350.” *Id.* ¶ 70. Message bubble with quote 350 includes quoter name 355, quoted portion 360, and quotee name 365. *Id.* Quoter name 355

identifies the user that is quoting an earlier message. *Id.* Quotee name 365 identifies the user whose earlier message is being quoted. *Id.*

Quoted portion 360 shows at least a portion of the earlier message that is being quoted. *Id.* Additionally,

[i]n some embodiments, at least some portion of the quoted portion 360 may comprise a control empowering redirection of the message thread interaction display 330 to the portion of the history of the message thread that corresponds to the original reception of the quoted message. For instance, the entirety of the quoted portion 360 may be a touch-screen control which, if selected, scrolls the message thread interaction display 330 upwards until the quoted message is visible on the client device 320.

Id. ¶ 72.

Sarafa discusses details of one device sending a first message to another device in connection with Figure 4, which is reproduced below.

Messaging Flow Visualization System 100

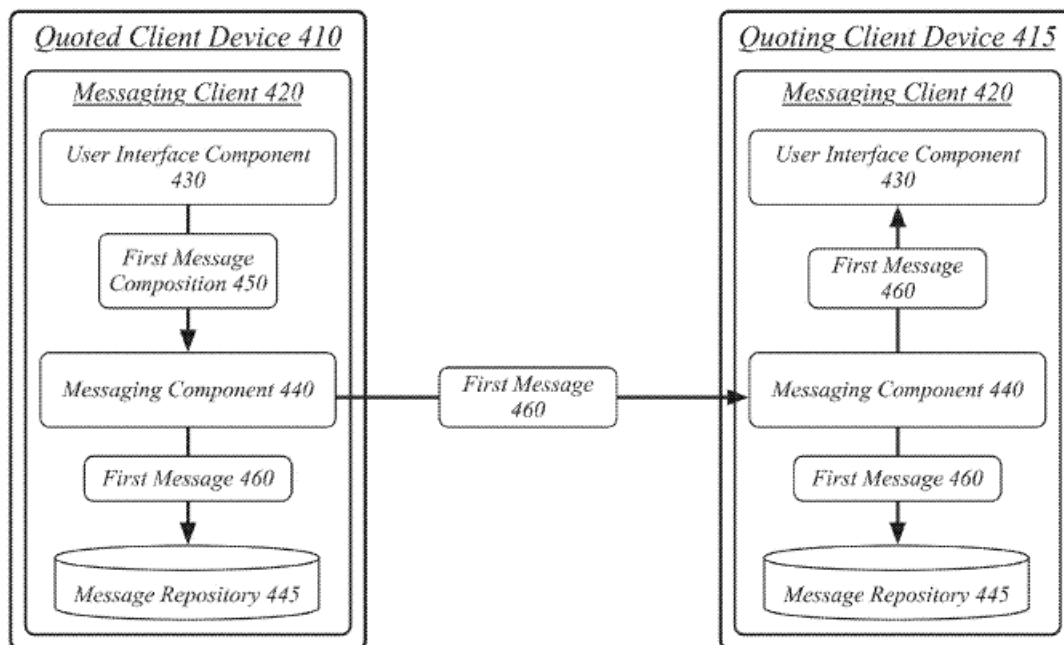


FIG. 4

Figure 4 shows a message transmission between quoted client device 410 and quoting client device 415. *Id.* ¶ 73.

Each of quoted client device 410 and quoting client device 420 includes messaging client 420, which has user interface component 430, messaging component 440, and message repository 445. *Id.* ¶¶ 75–77. User interface component 430 may present information to a user, as well as receive user commands. *Id.* ¶ 76. Messaging component 440 may exchange communications with messaging servers. *Id.* ¶ 75. Message repository 445 may store messages. *Id.* ¶ 77.

Using quoted client device 410's user interface component 430, a user produces first message composition 450. *Id.* ¶ 77. “[F]irst message composition 450 comprises text, media, and/or any other messaging content. The first message composition 450 is passed to the messaging component 440 and embodied in a first message 460.” *Id.* Quoted client device 410's message repository 445 stores first message 460. *Id.* Quoted client device 410's messaging component 440 transmits first message 460 to quoting client device 415. *Id.*

Quoting client device 415's messaging component 440 receives first message 460. *Id.* ¶ 78. Then,

[t]he first message 460 is stored in the message repository 445 local to the quoting client device 415 and is provided to the user interface component 430 for display to the user of the quoting client device 415. The user of the quoting client device 415 may then selected the first message 460 for quoting in a message composition by that user.

Id.

In connection with Figure 5, Sarafa discusses details of a user composing and sending a quoting message. Figure 5 is reproduced below.

Messaging Flow Visualization System 100

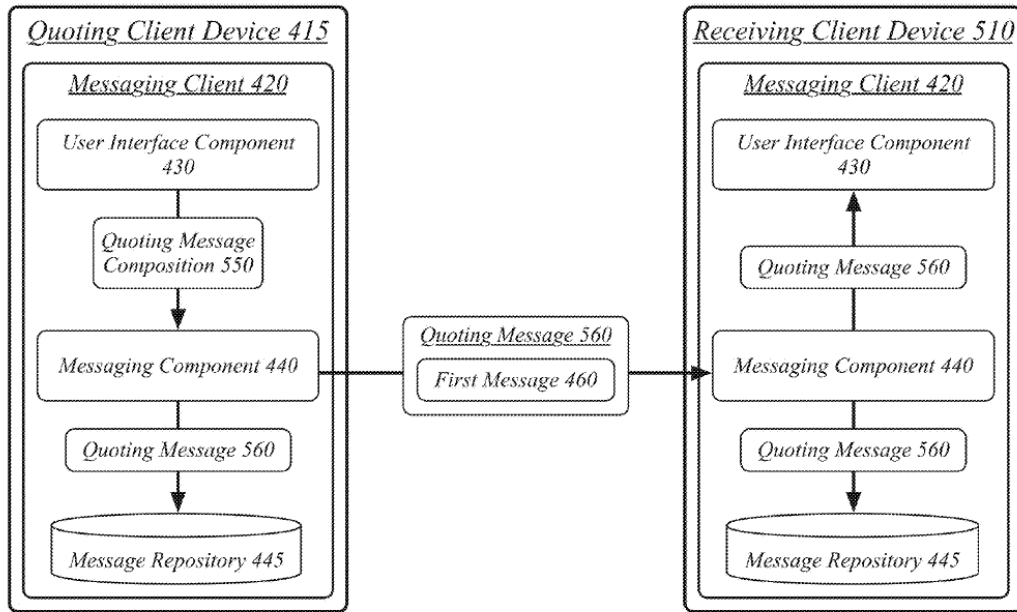


FIG. 5

Figure 5 shows a message transmission between quoting client device 415 and receiving client device 510. *Id.* ¶ 79. “In some cases, the receiving client device 510 may correspond to the quoted client device 410. In other cases, the receiving client device 510 may be a distinct client device from the quoted client device 410.” *Id.* ¶ 80.

Using quoting client device 415, a user produces quoting message composition 550. *Id.* ¶ 81. Quoting message composition 550 includes a quote of first message 460, along with “text, media, and/or other message content.” *Id.* “The quoting message composition 550 is passed to the messaging component 440 and embodied in a quoting message 560. The quoting message 560 encapsulates the first message 460 within it as a quote.” *Id.* Quoting client device 415’s message repository 445 stores quoting message 560. *Id.*

Additionally, quoting client device 415’s messaging component 440 transmits quoting message 560 to receiving client device 510. *Id.* Receiving

client device 510's messaging component 440 receives quoting message 560 as a message package. *Id.* ¶¶ 82–83. “The message package comprises a primary message portion and a quoted message portion. The quoted message portion corresponds to a recursive encoding of a message package format for the message package and includes a quoted message identifier identifying the quoted message.” *Id.* ¶ 83. Receiving client device 510's message repository 445 stores quoting message 560. *Id.* Also, quoting message 560 is supplied to user interface component 430 for display. *Id.*

In connection with Figure 6, Sarafa discloses further details of operations associated with quoting message 560. Figure 6 is reproduced below.

Messaging Flow Visualization System 100

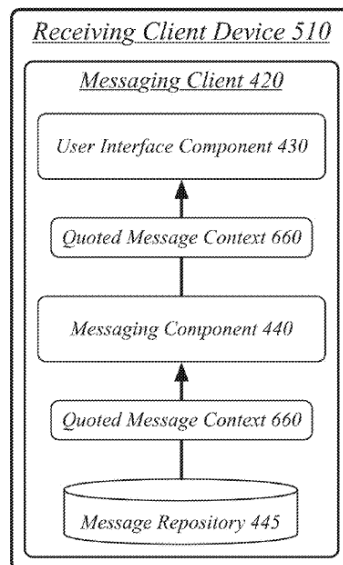


FIG. 6

Figure 6 shows “an embodiment of a receiving client 510 device retrieving quoted message 660 for a quoting message 560.” *Id.* ¶ 89.

Sarafa discloses that

[m]aking available the context of a quoted message may benefit a user in understanding a quoted message by providing

messages that were displayed before and/or after the quoted message so as to play the quoted message in context. As such, the display of a quoted message within a quoting message may include one or more controls that empower the user to shift a display of a message thread to the context of the quoted message.

Id. ¶ 90. Sarafa elaborates that

[t]he user interface component 430 may receive a quoted message selection in association with a display of the quoted message in a message thread interface for a message thread. For instance, the screen area of the display of the quoted message may comprise a touch-screen control that, when touched, generates a quoted message selection instructing the user interface component 430 to display the context of the quoted message. The user interface component 430 then, in response to the quoted message selection, redirects the message thread interface to an initial display of the quoted message in the message thread.

Id. ¶ 91.

User interface component 430 may do so in situations “where the quoted message store corresponding to the quoted message identifier is present on the receiving client device 510, as otherwise the quoted message context 660 is not available for display.” *Id.* ¶ 92. If quoted message context 660 is present, user interface component 430 acquires it from message repository 445, which may be executed via messaging component 440. *Id.*

3. *Overview of Oh*

Oh relates to messaging with a mobile terminal, such as a smartphone. Ex. 1008 ¶¶ 3, 234. Oh discusses increasing popularity of using such a mobile terminal for messaging with dialog windows showing sent and received messages. *Id.* ¶ 8. Oh explains that, as a result of high message volumes and limited display sizes, the mobile terminal may have “to display

only the latest messages with respect to the current time.” *Id.* ¶¶ 9–11.
“When multiple conversations with different topics are performed between several users, each user may experience difficulty in reading related messages together on the dialog window.” *Id.* ¶ 13. Accordingly, Oh discloses provisions to clarify the context of a conversation for users. *Id.* ¶ 15.

Oh discusses one embodiment in connection with Figure 7, which is reproduced below.

FIG. 7

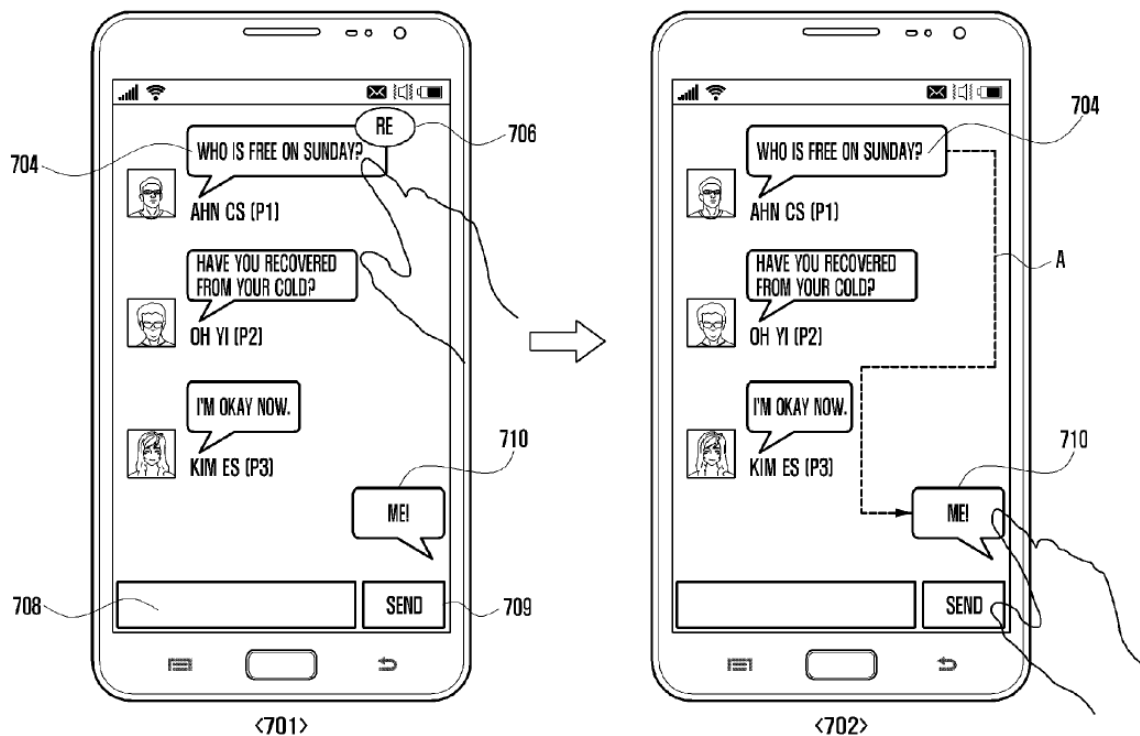


Figure 7 illustrates screen representations of a mobile terminal showing a dialog window of a message-based conversation function. *Id.* ¶¶ 180–181.

The dialog window shows messages from several participants. *Id.* ¶ 182. The messages are represented by word balloons. *Id.*

The system allows a user to create a link between an existing message and a new message. *Id.* ¶ 183. As indicated by reference numeral 701, the mobile terminal allows a user to select word balloon 704. *Id.* ¶ 184. When a user does so, link symbol 706 attaches to word balloon 704. *Id.* ¶ 185. Subsequently, a user may enter a message in input field 708 and touch send button 709. *Id.* ¶ 190. The mobile terminal displays the entered message as new word balloon 710 with a context-linking item shown between word balloon 704 and word balloon 710. *Id.* ¶¶ 190–191. For example, the mobile terminal may show dotted link line A connecting word balloon 704 and word balloon 710. *Id.* ¶ 191.

Oh discusses certain details of its messaging method in connection with Figure 3, which is reproduced below.

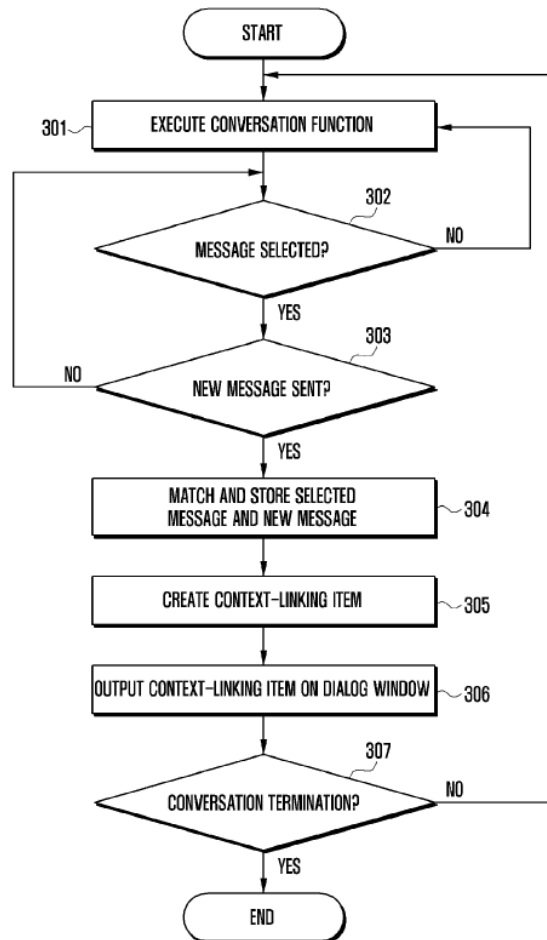


Figure 3 is a flowchart that shows “a procedure for assigning contextual information to messages and displaying the same in conversation operation.”

Id. ¶ 95.

In step 301, the mobile terminal’s control unit responds to a conversation initiation request by executing the conversation function application. *Id.* ¶ 96. This involves displaying the messages users have entered. *Id.*

In step 302, the control unit determines “whether at least one of the messages is selected by the user.” *Id.* ¶ 97. Then,

[w]hen at least one message is selected, the control unit . . . determines whether a new message is sent in step 303. That is, when the user enters a new message in the input field while selecting at least one word balloon, the new message will be output on the dialog window and sent to the counterpart.

Id. ¶ 98.

When a new message is sent, in step 304, the control unit generates a mapping between the new message and the selected message, storing the messages and the mapping together. *Id.* ¶ 100. Then, in step 305, the control unit generates a context-linking item between the new message and the selected message. *Id.* ¶ 101. “A context-linking item is represented as a link line linking word balloons or as a link symbol attached to word balloons.” *Id.* ¶ 103.

In step 306, the control unit “outputs the context-linking item on the dialog window.” Subsequently, in step 307, the control unit checks “whether an input signal for conversation termination is generated.” *Id.* ¶ 116. If not, the control unit reverts to step 301, continuing conversation operation. *Id.*

4. *Discussion*

a) *The Petition*

Petitioner argues that, like the ’192 patent, the cited prior art recognizes and addresses challenges of communicating clearly and efficiently within computer-messaging conversations. Pet. 8–10, 14–20. Petitioner contends that, “[l]ike the ’192 patent, Ji’s is directed to improving the efficiency of users in locating and reading messages.” *Id.* at 16. Petitioner also asserts that, “[l]ike the ’192 patent, Sarafa discloses the quoted message providing additional functionality by changing display of information associated with the quoted message.” *Id.* at 17.

Petitioner further contends that the cited prior art teaches the limitations that garnered allowance of similar claims in related U.S. Patent No. 9,860,198 B1 (“the ’198 patent”). *Id.* at 1, 7, 11–12, 14–20, 32–34. Petitioner asserts that “the ’192 patent is part of a patent family that was only allowed by amending the claims to require the formation a reply message automatically link another message in ‘a single step.’” *Id.* at 1. “But a ‘single step’ reply is by no means inventive,” according to Petitioner. *Id.* Petitioner argues that Ji discloses allowing “users to reply to a message with a single-step action that would include the original message in the reply.” *Id.* at 7.

Petitioner also asserts that the cited prior art teaches the other messaging features of the challenged claims. *Id.* at 7, 14–20, 26–32, 34–72. In doing so, Petitioner argues that both Ji and Sarafa teach certain features recited in the challenged claims. For example, Petitioner argues that each of Ji and Sarafa discloses a “reference,” which appears in limitations 1[c], 1[e], 1[f], 1[g], 1[h], 16[e], 16[g], 16[h], 16[i], 16[j], 24[c], 24[e], 24[f], 24[g], and 24[h], as well as dependent claims 2–9, 11–13, 17–20, 22, 25–28, and 30. Ex. 1001, 19:44–45, 19:55, 19:58, 19:63, 19:67, 20:2, 20:9, 20:17, 20:20, 20:25, 20:27–30, 20:33, 20:38, 20:42, 20:46, 20:50–51, 20:55, 21:24–25, 21:35, 21:38, 21:44, 21:48–49, 21:51, 21:57, 21:65, 22:3, 22:7, 22:13, 22:18, 22:49–50, 22:59–60, 22:63, 23:1, 23:7–8, 23:15, 24:1, 24:6–7, 24:10–11, 24:15–16, 24:21. Petitioner asserts that “Ji discloses . . . a reference.” Pet. 34. Petitioner also argues that “[s]imilar to Ji, Sarafa discloses a . . . reference,” addressing limitations 1[h], 16[j], and 24[h]. *Id.* at 50.

Each of limitations 1[h] and 24[h] recites “making said device responsive to a click or touch screen gesture interacting with said graphical reference to provide a further display indicating content of said message represented by said graphical reference.” Ex. 1001, 19:66–20:2, 23:4–8. Limitation 16[j] is nearly identical. *Id.* at 21:47–51. Regarding these limitations, in combination with its assertion that Sarafa discloses a reference, Petitioner cites Sarafa’s disclosure of “[a] message that quotes another message.” Pet. 51 (quoting Ex. 1007 ¶ 70) (alteration in original). Petitioner argues that the quoted message constitutes a reference. *Id.* at 50–51. Petitioner elaborates that

Sarafa teaches that the quoted message may have “one or more controls that empower the user to shift a display of a message thread to the context of the quoted message.” Ex. 1007 at [0090]. In particular, Sarafa discloses selecting the area of the quoted message within message 350. *See id.* at [0091]. As Sarafa explains, “the screen area of the display of the quoted message may comprise a touch-screen control that, when touched, generates a quoted message selection instructing the user interface component 430 to display the context of the quoted message.” *Id.*

Id. at 52.

Petitioner also argues that

a [person of ordinary skill in the art] would have been motivated to improve the messaging system of Ji—which embeds a quoted portion of an original message into a reply message—by incorporating Sarafa’s feature that enables the user to dynamically scroll to the original message in context by selecting the original message quoted in the reply message.

Id. at 20. Petitioner argues that Ji and Sarafa disclose features from the world’s most popular messaging applications. *Id.* at 20. Petitioner asserts

that the references have “the same specific goal of improving the user experience for reply messages in messaging applications.” *Id.*

Petitioner adds “[b]oth Ji and Sarafa disclose chat messaging systems that redirect the display of messages so a user can view an original chat message in context.” *Id.* at 22. Petitioner explains that “Ji scrolls back to the original message in response to interacting with a notification of a new reply message,” and “Sarafa scrolls back to the original message in response to interaction with the quoted portion in a reply message.” *Id.* at 23.

Petitioner argues that combining both ways of scrolling back would align with a number of Ji’s goals for providing efficient, effective messaging. *Id.*

Petitioner also argues that “[a person of ordinary skill in the art] would have had a strong expectation of success in combining Ji, and Sarafa, and the result of the combination would have been predictable.” *Id.* at 23. Petitioner explains, among other things, that both Ji and Sarafa disclose quoting an earlier message within a reply message. *Id.* at 24.

With each reference also disclosing a feature for scrolling back to show the user the earlier message in context, Petitioner argues that “Sarafa would therefore be a natural complement to Ji—by selecting the quoted message within the reply message, Ji’s display would dynamically scroll back to the original message and its surrounding context to provide the user with fluid and intuitive access to the messaging history.” *Id.* Petitioner also notes that, “[a]s Sarafa explains, [its scroll-back] feature may ‘benefit a user in understanding a quoted message by providing messages that were displayed before and/or after the quoted message.’” *Id.* at 18 (quoting Ex. 1007 ¶ 90). Petitioner adds that “Sarafa further explains that providing

additional context to users will ‘improv[e] the user experience of quoted messages for its users.’” *Id.* (quoting Ex. 1007 ¶ 23) (alteration in original).

Petitioner cites Oh when addressing certain claim limitations. For example, Petitioner argues that “Ji in view of Oh discloses” limitations 1[d], 16[f], and 24[d]. Pet. 38. These limitations reference limitations 1[c], 16[e], and 24[c], which require displaying “on said display and in conjunction with display of a message creation interface including a text entry box, a reference indication indicating a reference to said first one of said displayed graphical message display objects.” Ex. 1001, 19:42–46, 21:22–26, 22:47–52. Adding to this requirement, limitations 1[d], 16[f], and 24[d] recite “while said message creation interface is displayed, continuing to display at least a portion of said stream in said window, and enabling the device to respond to clicks or touch screen gestures that interact with at least one other of said graphical message display objects in said stream.” *Id.* at 19:47–52, 21:27–32, 22:53–57.

Petitioner argues that Ji discloses most of the requirements of these limitations, but states that “Ji does not expressly disclose enabling the device to respond to clicks or touch screen gestures that interact with at least one of the other graphical message display objects in the stream while the message creation interface is displayed.” Pet. 39. Petitioner contends that this requirement of limitations 1[d], 16[f], and 24[d] “would have been a natural and obvious design choice.” *Id.*

Petitioner elaborates that a person of ordinary skill in the art would have needed to decide whether to make the message interface modal or non-modal. *Id.* at 39–40. According to Petitioner and Dr. Cockburn, a modal interface would “force the user to interact only with the interface,”

whereas a non-modal interface would “allow the user to continue to interact with other messages.” Pet. 39–40; Ex. 1003 ¶ 120. Dr. Cockburn testifies that “[a] modal design would disable all other interaction while the user is engaged with a specific sequence of actions with the interface.” Ex. 1003 ¶ 36. In connection with this, Dr. Cockburn cites Exhibit 1014, which discloses that

[a] common use of modes is for GUI-based software to display so-call modal dialog boxes—dialog boxes that, when displayed, block users from interacting with other windows on the screen. They are called “modal” because they put the computer into a mode in which input to windows other than the modal dialog box is ignored.

Ex. 1014, 8.⁹

Petitioner argues that “a [person of ordinary skill in the art] would have been motivated to implement the message receipt interface of Ji using a non-modal design.” Pet. 40. Alleging certain disadvantages with modal interfaces, Petitioner contends that a non-modal interface lends itself to Ji’s system. *Id.* at 40–41.

Specifically, Petitioner contends Oh uses a non-modal interface that lends itself to Ji’s system. *Id.* at 41–44. Petitioner argues that Oh’s system allows a user to select multiple messages to which a single reply message will respond. *Id.* at 42–44. Petitioner asserts that “by allowing a user to select multiple messages, a [person of ordinary skill in the art] would understand that Oh teaches interacting with at least one other message while the message creation interface is displayed.” *Id.* at 44.

⁹ We cite to the page number in the lower right of Exhibit 1014.

Petitioner also argues that “[a person of ordinary skill in the art] would have been motivated to combine the teachings of Ji and Sarafa with the additional teachings of Oh with a strong expectation of success.”

Id. at 24. Petitioner notes that Oh discloses an alternative mobile messaging application from one of the world’s biggest smartphone makers.

Id. at 24–25. Petitioner adds that Ji, Sarafa, and Oh endeavor to improve messaging by addressing similar issues related to reply messages.

Id. at 25–26. Petitioner adds that a person of ordinary skill in the art would have recognized certain advantages of including Oh’s disclosure of enabling a user to reply to multiple messages with a single reply message.

Id. at 25–26.

Additionally, Petitioner argues that “[a person of ordinary skill in the art] would have had a strong expectation of success in combining Oh with Ji and Sarafa, and the result of the combination would have been predictable.”

Id. at 26. In connection with this, Petitioner cites similarities between Ji, Sarafa, and Oh. *Id.* Petitioner adds that combining Oh’s disclosure with Ji and Sarafa would involve “implementing a user experience technique that was well-understood, commonplace, and encouraged as a preferred approach in the art at the time.” *Id.*

b) The Parties’ Disputes

Patent Owner argues that Petitioner fails to demonstrate obviousness of the challenged claims for a number of reasons. PO Resp. 5–6. Patent Owner argues that Petitioner fails to show Ji, Sarafa, and Oh teach certain limitations of the challenged claims. *Id.* at 5–6. Patent Owner also contends that Petitioner does not show that a person of ordinary skill in the art would have been motivated to combine Ji and Sarafa in the claimed manner.

Id. at 6. Additionally, Patent Owner argues that Petitioner fails to show that a person of ordinary skill in the art “would have been motivated to combine Ji and Sarafa with Oh in the manner claimed.” *Id.* at 6. Patent Owner advances the same patentability arguments for all of the claims, collectively.

We now turn to detailed discussions of the parties’ disputes regarding the alleged obviousness of the challenged claims over Ji, Sarafa, and Oh.

(1) Whether Petitioner Shows the Prior Art Teaches or Suggests a “Reference” in Accordance with the Challenged Claims’ Requirements

In its Response, Patent Owner argues that neither the text of Ji’s quoted message nor the text of Sarafa’s quoted message is a “reference,” as recited in the challenged claims. PO Resp. 27. Patent Owner explains that mere text “does not provide a connection to the original message.” *Id.* In support of this, Patent Owner argues that “[a]s Dr. Almeroth explains, a connection is used by the software to locate the first message.” *Id.* Patent Owner asserts that “Ji provides no disclosure suggesting that the text of the message copied into the reply is used by the software as a connection to the first message to locate the first message.” *Id.*

Patent Owner adds that “[t]he Petition and Dr. Cockburn further rely on [Sarafa’s] ‘control’ within the Quoted Portion 360 that allows the user to interact with the displayed text to redirect the screen.” *Id.* at 28–29. Patent Owner argues that Sarafa’s “control” cannot correspond to the claimed “reference.” *Id.* at 29. Patent Owner explains that “even if this ‘control’ formed the requisite ‘connection,’ it cannot map onto the ‘reference’ in limitation 1[g]/16[i]/24[g] because it is not created by and transmitted by the replying device.” *Id.*

Petitioner counters that Patent Owner relies on an improperly narrow construction of “reference.” Pet. Reply 1–6. Petitioner notes that “[t]he ’192 Patent states: ‘By ‘reference,’ what is meant is that there is a **connection** between the second message and the first message.’” *Id.* at 2 (quoting Ex. 1001, 4:25–27). Petitioner argues that “[Patent Owner’s] additional requirement that ‘[t]he connection [of the reference] is used by the software on the various devices to locate the first message’ is not supported by *any* disclosure of the ’192 Patent, and is based solely on its expert’s say-so.” *Id.* at 3.

Additionally, Petitioner argues that the prior art teaches the claimed “reference” even under Patent Owner’s claim construction. *Id.* at 9. Petitioner asserts that “Sarafa’s quoted message portion includes a ‘quoted message identifier’ that fulfills the additional requirements [Patent Owner] improperly inserts into its construction.” *Id.* Petitioner argues that “Sarafa’s quoted message identifier is ‘data transmitted with the second message ... that provides a connection to the first message,’ wherein the required ‘connection’ is ‘used by the software on the various devices to locate the first message,’ as [Patent Owner] would require.” *Id.*

In its Sur-reply, Patent Owner maintains that “copied text clearly fails to meet the ‘reference’ limitation.” PO Sur-reply 1. Patent Owner elaborates that copied text “lacks the requisite ‘connection’ (copied text does not ‘connect’ to anything, let alone form a connection—such as a link—to the original message).” *Id.*

Turning to Petitioner’s arguments about Sarafa’s quoted message identifier, as it does in its Motion to Strike, Patent Owner argues that we should strike Petitioner’s citation of Sarafa’s quoted message identifier as

improper new argument. *Id.* at 9–11. We disagree, as explained above in Section II.A.

Patent Owner also argues that “Petitioner’s new theory” lacks merit. *Id.* at 11–12. Patent Owner argues that, contrary to Petitioner’s argument, Sarafa does not “state that the ‘identifier’ connects to the original message to allow it to be located.” *Id.* at 11. Instead, “the receiving device apparently uses the ‘identifier’ to determine whether there is a ‘correspondence’ with a ‘message store,’” Patent Owner explains. *Id.*

At the hearing, Patent Owner further explained that its position is [Petitioner has] utterly failed to show either in Ji or Sarafa that a link is transmitted with the reply message. What happens in Sarafa . . . is there is a control that arguably could be a link, although I’m not sure if even [Petitioner’s] expert has taken that position. That control is on the receiving device, it is not transmitted as part of the reply message. And so Sarafa may very well have links, but not a transmitted link . . . as required by the claims.

Tr. 64:9–19. Because Patent Owner acknowledges that a “link” is an example of a “reference,” this argument bears on our analysis of the dispute regarding the claimed “reference” of the ’192 patent. *E.g.*, PO Resp. 10. Patent Owner further argued that Sarafa does not teach including a “control” as part of the transmitted message package. Tr. 103:12–17. For example, Patent Owner emphasized that “in [paragraph] 92, [Sarafa] even calls it a user interface control, and this is why Dr. Almeroth goes at length to show that the control is part of the user interface that’s added to the incoming message when it comes in.” *Id.* at 103:12–15.

Petitioner responded that even Patent Owner’s claim construction “is disclosed by the message identifier that, in paragraph 92 of Sarafa, actually

says it's used to retrieve the original message.” *Id.* at 125:4–8. Petitioner elaborated that

the fact that it doesn't actually display it, that has nothing to do with the definition construction of link. That's actually in the claim where it says changing the display responsive to an interaction and based on the link. Yes, it's based on the link, because ultimately, the controls that Sarafa discusses are pulling up the message to display. And that's actually at the bottom of paragraph 92 in Sarafa where it says, “[i]n order to empower this retrieval, the quoted message identifier identifying the quoted message is assigned to be a message identifier for the initial display of the quoted message.”

Id. at 125:9–21.

Weighing the arguments and evidence, we find Petitioner's position that the prior teaches the claimed “reference” more persuasive than Patent Owner's contrary position. Pet. 14–18, 32–38, 44–53; PO Resp. 9–20, 26–30; Pet. Reply 9; PO Sur-reply 4–12. Specifically, we find that Sarafa's disclosure of its system using the quoted message identifier teaches the claimed “reference.” Pet. 16–18, 22–24, 50–53; Pet. Reply 9.

As noted above, Patent Owner argues that even though Sarafa may teach using a “link” (which is a type of “reference”), it fails to teach transmitting a link between devices. Tr. 64:12–26; PO Resp. 37–38; Sur-reply 8. Patent Owner also argues that even though Sarafa discloses transmitting its quoted message identifier between devices, the quoted message identifier is not a “link.” Tr. 109:16–18; Sur-reply 11–12. Thus, with respect to Petitioner's reliance on the quoted message identifier, the dispositive issue is whether the quoted message identifier qualifies as a “reference.”

A preponderance of the evidence supports Petitioner’s position that the quoted message identifier is a “reference.” Although Sarafa lacks a verbatim statement that the transmitted message package’s quoted message identifier is a connection that allows the software to locate the message, we find Sarafa’s disclosures collectively would have conveyed to a person of ordinary skill in the art that the quoted message identifier is a connection that serves that purpose. *E.g.*, Ex. 1007 ¶¶ 83, 86, 87, 90–92, 94–98; Ex. 1003 ¶¶ 71–73, 139–144; Ex. 1018 ¶¶ 37–38, 43; Pet. 14–18, 32–38, 44–53; Pet. Reply 9; *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (“[I]t is proper to take into account not only the specific teachings of the reference but also the inferences which one skilled in the art would reasonable be expected to draw therefrom.”).

Sarafa explains, for example, that its system uses the quoted message identifier to check for the quoted message on the device and, if the quoted message is present, retrieves it. *E.g.*, Ex. 1007 ¶¶ 96, 98. This suggests that the system uses the quoted message identifier to look for the quoted message and, if the message is present, to locate and retrieve the message. *See, e.g.*, Ex. 1018 ¶ 38.

Sarafa also discloses that it uses the quoted message identifier to “empower” the retrieval executed when user interface 430 redirects the display to show the initial display of the message. Ex. 1007 ¶ 92. In combination with the other disclosures regarding the quoted message and its quoted message identifier, this strongly suggests that the quoted message identifier is a “reference” that provides a connection allowing the software to locate the quoted message. *See, e.g.*, Ex. 1001, 15:52–16:13 (discussing “reference object,” providing example that “a user can ‘jump’ to the original

referenced message (and thus locate and change a display to the original placement of a message within a message stream’’)).

To the extent that Patent Owner believes Sarafa’s disclosure of using a “control” in the redirection process excludes the quoted message identifier from being a “reference,” we disagree. *See, e.g.*, PO Resp. 19 (“Sarafa describes the user interface on the device that receives the quoting message (the reply message). The user interface presented on the device that receives the reply message may include a ‘control’ which allows the receiving device to shift the display to the context of the quoted message.”). As Patent Owner explained during the hearing, a link, which is a type of reference, cannot perform redirection on its own. Tr. 105:14–18; 107:9–13. Thus, in combination with using the quoted message identifier as a “reference” to “empower” redirection, Sarafa also uses a “user interface control” when redirecting.

In sum, we agree with Petitioner’s and Dr. Cockburn’s view that a person of ordinary skill in the art would have understood that Sarafa’s quoted message identifier provides a connection that allows the software to locate the quoted message. Pet. Reply 9; Ex. 1018 ¶¶ 37–38. Thus, we find that the quoted message identifier meets Patent Owner’s construction of “reference.” *See, e.g.*, PO Resp. 9. As noted above, Dr. Almeroth addresses Sarafa’s quoted message identifier by testifying that “Sarafa’s discussion of the ‘quoted message identifier’ is insufficient to understand what it is.” Ex. 2004. We find this testimony unpersuasive, as Dr. Cockburn’s testimony persuades us that a person of ordinary skill in the art would have understood that the quoted message identifier is data that points to and allows the device to locate the message. Ex. 1018 ¶¶ 37–38.

*(2) Whether Petitioner Shows the Prior Art
Teaches or Suggests Limitations
1[h]/16[j]/24[h]*

Limitation 1[h] recites “making said device responsive to a click or touch screen gesture interacting with said graphical reference to provide a further display indicating content of said message represented by said graphical reference.” Ex. 1001, 19:66–20:2. Each of limitations 16[j] and 24[h] contains substantially the same recitation. *Id.* at 21:47–51.

In its Response, Patent Owner argues that

[t]his limitation recites “said device,” which is the same device on which the reply message is created and that transmits the message and reference (the “replying device”). And the “said message” in this limitation is the original message that is being responded to (the message that the “reference” connects to). Thus, the claims require the same device that accepts the single click or gesture in order to compose a responsive message (e.g., a “reply message”) to further accept a “click or touch screen gesture” that provides a further display indicating content of the message that is being replied to.

PO Resp. 31. Patent Owner argues that, contrary to Petitioner’s assertion, “Sarafa and Ji do not disclose this limitation.” *Id.*

Patent Owner contends that a person of ordinary skill in the art would have understood that “Sarafa does not teach or suggest providing redirection on the device transmitting the reply message.” *Id.* at 33. Patent Owner argues that a number of Sarafa’s disclosures teach the redirection feature only on the receiving device. *Id.* at 31–34. For example, noting that “Dr. Cockburn relies on Figure 3 and paragraphs [0090] and [0091],” Patent Owner argues that these disclosures relate only to the device that receives the quoting message. *Id.* at 31.

Patent Owner argues that Sarafa “treats the transmitting and receiving devices differently.” *Id.* at 33. Patent Owner and Dr. Almeroth emphasize that Sarafa discloses

the user interface component 430 only performs this redirection where the quoted message store corresponding to the quoted message identifier is present on the **receiving client device 510, as otherwise the quoted message context 660 is not available for display**. In some cases, the quoted message context 660 may be unavailable because the user was not a participant in the message thread when the quoted message was sent.

Id. at 33; Ex. 2004 ¶ 122. Based on this, Dr. Almeroth testifies that

[i]t would have thus been clear to a skilled artisan that Sarafa does not teach or suggest providing redirection on the device transmitting the reply message. This is because the availability of the redirection feature turns solely on whether the receiving device has the quoted message context. Had Sarafa intended to provide redirection on the transmitting device, then its availability would not turn on whether or not a receiving device had the quoted message context. Clearly, the transmitting device has the quoted message context, and the status of the receiving device should not impact the functionality on the transmitting device.

Ex. 2004 ¶ 122.

In its Reply, Petitioner argues that “[a person of ordinary skill in the art] would understand that Sarafa’s user interface applies equally to both the sending and receiving devices of the messaging system—not least because chat participants rapidly alternate roles between sender and receiver while using the same mobile application.” Pet. Reply 7–8. Petitioner adds that “Sarafa does not describe Figure 3 or the redirection feature as limited to the receiving device.” *Id.* at 10. Petitioner contends that “Sarafa describes its redirection feature as applying to the user interface of any *client* device, which includes both sending and receiving devices.” *Id.*

Petitioner also disputes the logic in Patent Owner’s argument that “[h]ad Sarafa intended to provide redirection on the transmitting device, then its availability would not turn on whether or not a receiving device had the quoted message context.” *Id.* at 10–11 (alteration in original); PO Resp. 33. Petitioner argues that “Sarafa does not discuss selective availability of the redirection feature on the transmitting device because it is unnecessary to do so,” explaining that “[i]n normal use, the quoted message—i.e., the message selected by the user of the transmitting device for reply—will be available on the transmitting device.” *Id.*

Additionally, Petitioner argues that Patent Owner fails to consider the teachings of Ji. *Id.* at 12. Patent Owner explains that Ji discloses displaying a replied-to message on both sending and receiving devices. *Id.*

In its Sur-reply, Patent Owner counters that “Sarafa only provides ‘redirection’ for received messages, but not for transmitted messages.” PO Sur-reply 12. Patent Owner contends Petitioner overlooks other differences in the way Sarafa treats sent and received messages on a device. *Id.* at 15.

Weighing the parties’ arguments and evidence, we find Petitioner’s position more persuasive. In particular, we find that a preponderance of the evidence demonstrates that a person of ordinary skill in the art would understand from Sarafa that every client in its system would have the redirection feature available for any quoted message that is available locally.

Patent Owner does not dispute Petitioner’s position that Sarafa discloses a system in which clients have the same software for the user interface. PO Sur-reply 12–13. According to Patent Owner, however, “Sarafa provides ‘redirection’ only for reply messages received by a device, and not for reply messages transmitted by a device.” *Id.* at 2.

Petitioner persuades us otherwise. Petitioner and Dr. Cockburn cite disclosure in Sarafa that conveys any of its clients would provide redirection for any displayed quoting message, so long as the quoted portion of the message is available on the client. Pet. 16–18, 50–53; Pet. Reply 10–11; Ex. 1003 ¶¶ 139–144; Ex. 1018 ¶¶ 39–48. For example, as Dr. Cockburn notes, Sarafa discloses that “a redirection control for a quoted portion 360 may be selectively active based on whether or not the quoted message is present in the message history for a message thread on a client device 320.” Ex. 1007 ¶ 72; Ex. 1018 ¶ 42. Patent Owner and Dr. Almeroth make much of the fact that Figure 3 shows an example client device 320 that happens to have received, rather than transmitted, the quoting message.

PO Resp. 31–32; Ex. 2004 ¶ 121. But Dr. Cockburn’s testimony persuades us that Sarafa does not limit its discussion of “a client device 320” to situations where the device received the quoting message. Ex. 1018 ¶¶ 40–42. For example, we find persuasive Dr. Cockburn’s testimony that

[a person of ordinary skill in the art] would understand that Sarafa’s “client device 320” includes both sending and receiving devices. *See, e.g., id.* at [0110] (“The client devices 910 may correspond to one or more of a smartphone device 150, tablet device 160, personal computer device 180, and/or **any of the client device 320**, quoted client device 410, quoting client device, receiving client device 510, and client devices 810.”), [0127] (similar).

Id. ¶ 42.

Patent Owner and Dr. Almeroth focus on other portions of Sarafa that discuss examples in which the client device has received a message. PO Resp. 31–34; PO Sur-reply 12–14; Ex. 2004 ¶¶ 122–123. For instance, Patent Owner and Dr. Almeroth emphasize Sarafa’s disclosure that “the user interface component 430 **only performs this redirection** where the quoted

message store corresponding to the quoted message identifier is present on the receiving client device 510.” Ex. 1007 ¶ 92 (emphasis added); PO Resp. 33; Ex. 2004 ¶ 122. We find Petitioner’s and Dr. Cockburn’s understanding of this passage more logical than Patent Owner’s and Dr. Almeroth’s. *E.g.*, PO Resp. 33; Pet. Reply 10–11; Ex. 1018 ¶ 48; Ex. 2004 ¶ 122. Because this particular passage discusses an example where the client device has received the quoting message and may not have the quoted message, it makes sense that the availability of the redirection function in that particular instance depends on the availability of the message. Pet. Reply 10–11; Ex. 1018 ¶ 48. Contrary to Patent Owner’s and Dr. Almeroth’s view, it does not follow that the passage limits Sarafa’s entire disclosure to providing the redirection feature only on a device that has received, rather than transmitted, the quoting message. Pet. Reply 10–11; Ex. 1018 ¶ 48.

Likewise, the other passages cited by Patent Owner and Dr. Almeroth, which also happen to discuss examples of clients that have received the quoting message, do not persuade us that Sarafa limits the availability of the redirection feature to devices that have received, rather than transmitted, a quoting message. *See* PO Resp. 31–34; PO Sur-reply 12–14; Ex. 2004 ¶¶ 122–123. To the extent that Sarafa does not provide an express example of a client transmitting a quoting message and performing redirection with that message, that does not negate Petitioner’s persuasive position. In particular, it does not negate Petitioner’s persuasive evidence that a person of ordinary skill in the art would have understood from Sarafa that any client with a local store of the quoted message would provide redirection, including a device that transmitted the quoting message.

Moreover, Patent Owner's observations that Sarafa contains some disclosure of some ways that it treats sent and received messages differently does not negate Petitioner's showing that a person of ordinary skill in the art would have understood from Sarafa that any client with a local copy of the quoted message would perform redirection. For example, Patent Owner's observation that Sarafa teaches displaying sent and received messages on different sides has little or no persuasive value with respect to Sarafa's disclosure of redirecting. PO Sur-reply 13 ("For example, sent messages are displayed along the right side of the display whereas received messages are displayed on the left side.").

*(3) Whether Petitioner Shows that the Prior Art
Teaches Limitations 1[d], 16[f], and 24[d]*

Each of limitations 1[d], 16[f], and 24[d] recites "while said message creation interface is displayed, continuing to display at least a portion of said stream in said window, and enabling the device to respond to clicks or touch screen gestures that interact with at least one other of said graphical message display objects in said stream." Ex. 1001, 19:47–52, 21:27–32, 22:52–57.

Addressing this claim language, the Petition argues that "Ji in view of Oh discloses this limitation." Pet. 38. The Petition notes that "Ji discloses continuing to display at least a portion of the stream in the window while the message creation interface is displayed." *Id.* Petition adds that "[a]s part of the selection of messages, Oh discloses being able to select multiple messages for replying in a single reply message." *Id.* at 42. In support of this, the Petition cites Oh's Figure 3 and corresponding disclosure. *Id.* at 42–43. Petitioner argues that, in Figure 3,

[a]t step 302, Oh discloses a control unit 160 determining 'whether *at least one of the messages* is selected by the user.'

[Ex. 1008] at [0097] (emphasis added). As discussed above regarding Figure 7, Oh allows the user to enter a new message after selecting a single word balloon 704. *Id.* at [0184]; Cockburn Decl. ¶127. At step 303, Oh discloses that “[w]hen **at least one message is selected**, the control unit 160 determines whether a new message is sent.” Ex. 1008 at [0098] (emphasis added). If the decision is “No” and a new message has not been sent, the process goes back to step 302. Cockburn Decl. ¶127. Thus, the user may continue to select existing messages until a new message is sent. *Id.*; Ex. 1008 at [0097]-[0098].

By permitting selection of “at least one” message to enter a reply and generate a context-linking item, a POSA would understand that Oh permits selection of multiple messages for reply. Cockburn Decl. ¶128. And by allowing a user to select multiple messages, a POSA would understand that Oh teaches interacting with at least one other message while the message creation interface is displayed. *Id.*

Id. at 43–44.

In its Response, Patent Owner argues that, contrary to Petitioner’s assertion, “Oh does not disclose a multiple message reply.” PO Resp. 36. According to Patent Owner, “Dr. Cockburn’s analysis is based on gap filling and unwarranted leaps to read in a multiple-message reply disclosure into Oh that is simply not there.” *Id.* at 38. Patent Owner disagrees with Dr. Cockburn’s interpretation of Oh’s Figure 3 and corresponding disclosure. PO Resp. 38–41. Patent Owner argues that

[a]s Dr. Almeroth explains, in software, it is common to test for the binary condition “something” or “nothing.” This is typically considered testing for “zero” or “greater than zero,” but “greater than zero” may also be expressed as “at least one.” Therefore, an algorithm designed to allow selection of a single message may typically test for whether that a single selection has taken place by testing for testing for “zero” or “at least one.” Almeroth at ¶¶178-179. Accordingly, Dr. Cockburn’s assumption that a test for “at least one” implies selection of “two or more” is incorrect and based on hindsight.

Id. at 25. Patent Owner elaborates that

Figure 3 provides a flow chart whereby a “conversation function” is executed. The first step asks whether a message (singular) has been selected at decision diamond 302. If not, the algorithm returns to “execute conversation function” at step 301, which then proceeds again to the “message selected?” step 302. If a (single) message selection has been detected in step 302, the algorithm checks to see if a “new message [has been] sent” at step 303. A skilled artisan would understand that this step entails checking to see if the user has activated the “SEND” button to transmit the message, since the steps that follow (304-306) are processing steps that occur once the message has been sent. Steps 302-303 would take place rapidly and effectively provide a pause in the algorithm until the answer to both test conditions is “yes.” For decision diamond 303, the “conversation function” would effectively be paused (and control repeatedly returned to diamond 302) until the new message is sent. Almeroth at ¶¶ 170-171.

Id. at 40. Patent Owner adds that “[a]s explained by Dr. Almeroth, a skilled artisan would readily understand the purpose of this loop is to see if the message is still selected, and that if it has been unselected, the algorithm loops back to the starting point, the ‘conversation function’ of step 301.”

Id. at 41 (citing Ex. 2004 ¶ 171). Additionally, Patent Owner argues that many portions of Oh, including Figure 3 and text, refer to selection of a singular message. *Id.* at 41–43.

In its Reply, Petitioner disputes Patent Owner’s assertion that Oh does not disclose a multiple message reply because Figure 3 uses the singular “message.” Pet. Reply 13. “This is taken out of context because the corresponding description of Figure 3 explicitly discusses selecting ‘at least one’ message, not only a single message.” *Id.* Petitioner also argues that, contrary to Patent Owner’s argument, it is implausible “that Oh’s discussion of selecting at ‘at least one’ message really means selecting just one

message.” *Id.* Petitioner argues that “Oh itself expressly confirms that ‘at least one’ message means ‘one or more’ messages. *Id.* Addressing Patent Owner’s explanation of the purpose of the “no” branch from step 303 of Oh’s Figure 3, Petitioner argues that

[i]gnoring Oh’s clear teaching, PO also argues that the purpose of Figure 3’s loop is not to allow multiple messages to be selected, but to “effectively provide a pause in the algorithm until the answer to both test conditions is ‘yes.’” POR 40. This convoluted interpretation is contrary to the understanding of a [person of ordinary skill in the art]. Cockburn Reply ¶¶53-56. First, logic flow diagrams like Figure 3 typically omit program loops waiting for user input. *Id.* Oh, in particular, expressly underscores that such details will be omitted. Oh [0028]. Second, if only one message could be selected for reply (as PO asserts), there would have been no reason to include the “no” path from decision diamond 303 back to decision diamond 302 in Oh’s Figure 3. Cockburn Reply ¶¶55-56. Instead, declining to send a message (i.e., canceling a reply in progress) would take the user directly from diamond 303 back to the “Execute Conversation Function” 301. *Id.*

Id. at 14.

In its Sur-reply, Patent Owner maintains that Oh does not suggest a multiple message reply, but “teaches that a message (singular) is selected.” PO Sur-reply 19. Additionally, Patent Owner disputes certain details of Petitioner’s interpretation of and hypotheticals relating to Figure 3 and other disclosures of Oh.

Id. at 19–22.

Weighing the parties’ arguments and evidence, we find Petitioner’s position more persuasive than Patent Owner’s. We find that a person of ordinary skill in the art would have understood Oh’s disclosure as teaching that its system provides the user with the capability for a multiple message

reply, as Petitioner argues. Pet. 41–44; Pet. Reply 12–14. For example, we agree with Petitioner (*see id.*) that Oh’s disclosure that “the control unit 160 determines whether *at least one* of the messages is selected by the user at step 302,” in combination with the “no” return branch from step 303 would have been understood by a person of ordinary skill in the art as providing the user the ability to select multiple messages for reply. Ex. 1008 ¶¶ 97–98 (emphasis added); Fig. 3; Ex. 1003 ¶¶ 79; 127–128; Ex. 1018 ¶¶ 51–60. Reinforcing this, Oh explains that “when the user enters a new message in the input field while selecting *at least one* word balloon, the new message will be output on the dialog window and sent to the counterpart.” Ex. 1008 ¶ 98 (emphasis added); Ex. 1003 ¶¶ 79, 127–128.

We find persuasive Dr. Cockburn’s testimony that Oh’s repeated reference to selection of “at least one” message/balloon conveys that the system enables a user to select one or more messages. Ex. 1003 ¶¶ 79, 127–128; Ex. 1018 ¶¶ 57–59. That understanding comports with the ordinary meaning of “at least one.” Indeed, we find persuasive Dr. Cockburn’s testimony that Oh uses “at least one” in the same manner that it uses “one or more.” Ex. 1018 ¶ 59. For example, as Dr. Cockburn notes, Oh claims its invention in claim 1 by expressly reciting “detecting user input for *one or more messages*.” Ex. 1008, cl. 1 (emphasis added); Ex. 1018 ¶ 59. As Dr. Cockburn further explains,

[d]ependent claim 2 of Oh confirms that the “user input for one or more messages” of claim 1 can be “a drag-and-drop event starting from a message output on a dialog window and leading to an input field of the dialog window.” Oh cl. 2; *see also* cl. 14 (similar). Thus, a [person of ordinary skill in the art] would understand that a user can drag and drop multiple messages into Oh’s input field.

Ex. 1018 ¶ 59. Dr. Cockburn’s testimony persuades us that Oh’s claims 1 and 2 teach a user dragging and dropping “one or more messages” (including multiple messages) in the process of creating a reply message. Ex. 1018 ¶¶ 59–60. We find unavailing Patent Owner’s counter argument that Oh’s “[c]laim 1 says nothing about forming a reply” (PO Sur-reply 19), as Dr. Cockburn’s testimony persuades us that Oh’s claim 2 teaches using claim 1’s step of “detecting user input for one or more messages” in the process of forming a reply message. Ex. 1018 ¶¶ 59–60. We also find unavailing Patent Owner’s response that Oh’s “[c]laim 2 states that ‘a message’ (singular) may be dragged to the new message dialog window.” PO Sur-reply 19. To the extent Oh’s claim 2 requires a user to interact with “a message,” that does not preclude the user interacting with “one or more messages,” as expressly recited in Oh’s claim 1.

Additionally, Dr. Almeroth does not cite persuasive, objective support for his position that Oh uses “at least one” as a way to convey that the software is testing for “‘zero’ or ‘not zero.’” Ex. 2004 ¶¶ 178–179. As Dr. Cockburn notes, Oh’s claim 1 recites “detecting *user* input for one or more messages,” which conveys that the user provides input for the one or more messages. Ex. 1008, cl. 1 (emphasis added); Ex. 1018 ¶¶ 59–60. Indeed, Dr. Almeroth’s reading appears to conflict with Oh’s disclosure regarding Figure 3 that “a *user* enters a new message . . . while *selecting at least one* word balloon.” Ex. 1008 ¶ 98. This passage refers to what a *user does*, not what the software tests for.

Also, we find Dr. Cockburn’s citation of Oh’s disclosures of selection of “at least one” message more persuasive than Dr. Almeroth’s observation that Oh also refers to a singular “message” in some instances. Ex. 1003

¶¶ 79, 127–128; Ex. 1018 ¶¶ 57–60; Ex. 2004 ¶¶ 175–177. Discussion of examples in which only one message is selected comport with Dr. Cockburn’s testimony that Oh’s system allows selection of “at least one” message, i.e., one or more messages.

We also find persuasive Dr. Cockburn’s testimony that, in combination with Oh’s disclosure of selecting “at least one” message, the structure of Oh’s Figure 3 would have conveyed the system enables a person of ordinary skill in the art to reply to multiple messages. Ex. 1003 ¶ 79, 127–128; Ex. 1018 ¶¶ 53–56. Consistent with Dr. Cockburn’s testimony, we find it most logical that Figure’s 3’s express disclosure of repeatedly checking for message selection until the new message has been sent allows the user to select multiple old messages before sending the new message. Ex. 1003 ¶¶ 79, 127–128; Ex. 1018 ¶¶ 53–56.

Additionally, we find persuasive Dr. Cockburn’s testimony that, contrary to Dr. Almeroth’s testimony, a person of ordinary skill in the art would not have thought Oh depicts the return loop the way it does merely to convey that the system pauses so a user can unselect a message. Ex. 1018 ¶¶ 53–56; Ex. 2004 ¶¶ 170–171. Consistent with Dr. Cockburn’s testimony, Oh suggests that details like pausing for user input would not appear in its flow chart. Ex. 1003 ¶ 54. For example, Oh discloses that “[d]etailed descriptions of well-known functions and structures incorporated herein will be omitted to avoid obscuring the subject matter of the present invention.” Ex. 1008 ¶ 28. Moreover, consistent with Dr. Cockburn’s testimony, we find that a person of ordinary skill in the art would have thought that if Oh intended to expressly disclose only that the user can unselect a message, Oh’s flow chart would have had a different structure, such as returning to a

different point in the process and/or showing a step of checking whether the user unselected a message. *E.g.*, Ex. 1018 ¶¶ 55–56. Although Oh’s step 303 and “no” return branch would also allow the user to unselect a message (Ex. 2004 ¶¶ 170–171), that does not conflict with Dr. Cockburn’s persuasive testimony that these features appear in Figure 3 to disclose provisions for selecting multiple messages (Ex. 1003 ¶¶ 79, 127–128; Ex. 1018 ¶¶ 51–56).

(4) *Whether Petitioner Shows Motivation to
Combine Ji and Sarafa in the Claimed Manner*

In its Response, Patent Owner argues that

[t]he Petition fails to establish that a person of ordinary skill in the art (a “skilled artisan”) would have been motivated to combine Ji and Sarafa in the manner claimed. Specifically, (a) a skilled artisan would not have been motivated to modify Ji based on Sarafa, and (b) even if there were a motivation to do so, a skilled artisan would combine Ji’s “message operation bar” embodiment with Sarafa, and not the limited-functionality “single touch” embodiment.

PO Resp. 6. We turn now to detailed discussions of these two arguments.

(a) *Whether a Person of Ordinary Skill in
the Art Would Have Modified Ji Based on
Sarafa*

In its Response, Patent Owner contends that Petitioner fails to articulate a viable reason that a person of ordinary skill in the art would have modified Ji in view of Sarafa. PO Resp. 44–53. Patent Owner faults Petitioner’s and Dr. Cockburn’s reliance on Ji’s paragraph 92, which Patent Owner argues is “indecipherable and ambiguous at best.” *Id.* at 44 (citing Ex. 1003 ¶ 84). Patent Owner asserts that Dr. Cockburn reads Ji based on hindsight. *Id.* Citing Dr. Almeroth’s testimony, Patent Owner argues that “[a] skilled artisan without knowledge of the ’192 patent would not interpret

Ji's paragraph [0092] as Dr. Cockburn has. In fact, the skilled artisan would simply disregard the paragraph as indecipherable.” *Id.* (second alteration in original).

Patent Owner takes issue with Dr. Cockburn's testimony that Ji discloses “the user is notified upon receipt of a new reply message in a particular group chat group.” Ex. 1003 ¶ 84; PO Resp. 44–45. Patent Owner argues that Ji does not explain how this happens. PO Resp. 44–45. Patent Owner also argues that, based on the details Ji does provide, “Sarafa provides different functionality than Ji, and Dr. Cockburn fails to explain how Sarafa ‘extends’ Ji, how this ‘extension’ is ‘natural,’ or why a skilled artisan would look to Sarafa in the first place, given the substantial differences in approach.” *Id.* at 45.

Patent Owner also takes issue with Dr. Cockburn's testimony that, in Ji, “[w]hen the user clicks on the notification, the user is presented with the group chat stream ‘scrolled up to the page’ of the replied-to message.” Ex. 1003 ¶ 84; PO Resp. 45. Patent Owner contends that Dr. Cockburn “does not accurately characterize” Ji's disclosure. *Id.* After discussing certain details of Ji's disclosure, Patent Owner concludes that Ji's discussion of “scrolled up” chat messages

is ambiguous and cannot be understood by a skilled artisan. The passage does not explain how the message is “located” or by whom (the user or the system), and further fails to reveal how and by whom the “pages” of chat messages are “scrolled up” to the page of the first chat message. It further fails to reveal when this scrolling occurs or by whom (the system or by the user scrolling manually).

Id. at 46.

Patent Owner then scrutinizes the grammar, punctuation, and clarity of Ji. *Id.* at 46–47. Patent Owner argues that

[g]iven the incorrect grammar, incorrect punctuation, ambiguous and vague translated text, lack of any user interface figures that correspond to this paragraph, and lack of a description in Ji of any technology that would support the functions attributed to this paragraph by Dr. Cockburn, a skilled artisan would disregard the passage and draw no conclusions from the passage.

Id. at 47.

Patent Owner then argues that even if Ji discloses a “scroll-back” feature, a person of ordinary skill in the art would not have been motivated to modify Ji with Sarafa’s disclosure. *Id.* at 48–53. Patent Owner argues that “the alleged ‘improvement’ is much less than what Dr. Cockburn suggests.” *Id.* at 48. Patent Owner explains that Ji’s alleged scroll-back feature is already available to the user much more of the time than Dr. Cockburn suggests. *Id.*

Patent Owner further contends that “Ji and Sarafa have different approaches and each approach has trade-offs that would be weighed by a skilled artisan.” *Id.* at 50. Patent Owner argues that Dr. Cockburn’s proposed combination of Ji and Sarafa would provide “redundant paths” for scroll-back, which “may confuse the user, especially when there are other message-based options having nothing to do with scroll-back.” *Id.* at 51. Patent Owner also argues that “[a] skilled artisan would recognize that under Dr. Cockburn’s interpretation, Ji and Sarafa each offer different access points, and, again, each have trade-offs. A skilled artisan would have no motivation to simply switch from Ji to Sarafa.” *Id.* at 42.

In its Reply, Petitioner counters that “there is no factual or legal basis for a [person of ordinary skill in the art] to ***completely disregard*** Ji

paragraph 92 as [Patent Owner] proposes.” Pet. Reply 18. Petitioner argues that Patent Owner extensively discusses what Ji’s paragraph 92 discloses, undercutting Patent Owner’s argument that the paragraph is “indecipherable.” *Id.* at 16. Petitioner disputes Patent Owner’s arguments that Ji lacks sufficient detail about recognizing receipt of a new message, automatic scrolling, and the preset message interface. *Id.* at 16–17. Petitioner explains that “a prior art reference is assumed to be operable and enabled.” *Id.* at 14 (citing *In re Antor Media Corp.*, 689 F.3d 1282, 1289 (Fed. Cir. 2012)). Addressing Patent Owner’s criticism of Ji’s grammar, punctuation, and clarity, Petitioner argues that “[Patent Owner] does not challenge the translator’s testimony, explain how these purported issues could materially change the meaning of Ji’s disclosure or propose an alternative to the certified translation.” *Id.* at 17.

Petitioner also asserts that, contrary to Patent Owner’s arguments, Ji and Sarafa disclose complementary scroll-back features accessible at different times. *Id.* at 18–19. According to Petitioner, “Ji scrolls back to the original message ‘in response to *interacting with a notification* of a new reply message,” whereas “Sarafa scrolls back to the original message in response to interaction with the quoted portion in a reply message.” *Id.* at 18. Additionally, Petitioner disputes Patent Owner’s argument that combining the references risks user confusion. *Id.* at 19. Petitioner argues that “[t]here would be minimal risk of user confusion because the options are accessed through different user interface controls.” *Id.*

In its Sur-reply, Patent Owner does not further discuss its argument that a person of ordinary skill in the art would have been motivated to modify Ji in view of Sarafa. *See generally* PO Sur-reply.¹⁰

Weighing the parties' arguments and evidence, we find that Petitioner demonstrates by a preponderance of the evidence that a person of ordinary skill in the art would have been motivated to combine the teachings of Ji and Sarafa. As explained below, Petitioner persuades us that a person of ordinary skill in the art would have understood that Ji teaches automatic scrolling, and that Sarafa's automatic scrolling would have beneficially complemented Ji's. Pet. 21–23; Pet. Reply 16–19; Ex. 1003 ¶¶ 84–86; Ex. 1018 ¶ 68.

Additionally, regardless of whether Ji teaches automatic scrolling, Petitioner persuades us that Ji and Sarafa address similar problems related to tracking and understanding convoluted conversations in messaging systems. Pet. 15–21; Ex. 1003 ¶¶ 66, 67, 73, 82, 83. As Dr. Cockburn testifies, Ji emphasizes the problem that users cannot quickly find and understand messages in complicated message streams. Ex. 1003 ¶ 66 (citing Ex. 1006 ¶ 2); Pet. 15. Petitioner also persuades us that Sarafa addresses such problems, at least in part, by expressly teaching certain advantages of its scroll-back feature, such that a person of ordinary skill in the art would have considered it advantageous (notwithstanding Patent Owner's less persuasive evidence of redundancy and confusion) to add Sarafa's scroll-back feature to

¹⁰ Patent Owner's Sur-reply does elaborate on its position that even if a person of ordinary skill in the art would have been motivated to combine the references' teachings, the combination would have involved Ji's message operation bar approach. The dispute related to that argument is discussed below in Section III.C.4.b).(4).(b).

Ji's system. Pet. 17–18; 22–24; Ex. 1003 ¶¶ 73, 83. For example, addressing the same problems discussed in Ji, Sarafa explains that its scroll back feature would facilitate a user's ability to understand a complicated conversation because “[m]aking available the context of a quoted message may benefit a user in understanding a quoted message by providing messages that were displayed before and/or after the quoted message so as to play the quoted message in context.” Ex. 1007 ¶ 90; Pet. 18; Ex. 1003 ¶ 73. Similarly, Sarafa explains that its scroll back feature “provid[es] additional context to users . . . , improving the user experience of quoted messages for its users.” Ex. 1007 ¶ 23; Pet. 18; Ex. 1003 ¶ 73. We find that these disclosed benefits would have provided compelling motivation for a person of ordinary skill in the art to add Sarafa's scroll back feature to Ji's messaging system. Pet. 20–24; Ex. 1003 ¶¶ 80, 82–86. Indeed, as Dr. Cockburn explains, “[s]ince Ji also quotes the original message in the reply, Sarafa would therefore be a natural complement to Ji.” *Id.* ¶ 86.

As for the arguments raised by Patent Owner, we find Petitioner's positions more persuasive than Patent Owner's. We agree with Petitioner that, contrary to Patent Owner's argument, a person of ordinary skill in the art would not have disregarded completely Ji's paragraph 92. Notwithstanding that Patent Owner may have identified imperfections in Ji's paragraph 92, Petitioner persuades us that a person of ordinary skill in the art would understand certain key things from it. Patent Owner recognizes that

Ji . . . describes the ‘scrolling’ referred to by Dr. Cockburn. Ji states:

. . . to make it convenient for the user to read and understand, the target message, i.e., a first chat message, is located in the message window; in the message group with a plurality of chat message

pages of a plurality of chat message are scrolled up
to the page of a first chat message

PO Resp. 46 (quoting Ex. 1006 ¶ 92) (second and third alterations in original). Thus, it is undisputed that Ji teaches “to make it convenient for the user . . . message pages . . . are scrolled up.” But Patent Owner suggests that a person of ordinary skill in the art might understand that the messages “are scrolled up” manually by the user, as opposed to automatically by the device. PO Resp. 46. We disagree. Given Ji’s disclosure that the scrolling “make[s] it convenient for the user,” we find it most logical that a person of ordinary skill in the art would understand Ji as teaching automatic scrolling, not manual scrolling by the user. Dr. Almeroth views Ji’s disclosure regarding messages that “are scrolled up” as “fatally ambiguous.” Ex. 2004 ¶¶ 150–151. We do not agree. Like Patent Owner, Dr. Almeroth concedes that Ji teaches scrolling, but says it is unclear whether the device automatically scrolled the messages or a person manually scrolled them. *Id.* As explained above, the logical reading of Ji is that the device automatically scrolled the messages, which Ji explains “make[s] it convenient for the user.” Ex. 1006 ¶ 92.

Additionally, we disagree with Patent Owner’s suggestion that Ji does not teach automatic scrolling because “there is no obvious mechanism for the system to find the original message in order to automatically scroll to it.” PO Resp. 47–48. Patent Owner appears to assume that if Ji’s system performed automatic scrolling, it would explain how it does so. But Patent Owner does not provide persuasive support for such a position.

Petitioner also persuades us that Ji provides its scrolling feature in certain circumstances, and Sarafa provides its scrolling feature in other circumstances. Pet. 22–23; Pet. Reply 18–19. Patent Owner does not argue

that the references teach providing their scrolling features in the same circumstances. *See, e.g.*, PO Resp. 48–53.

Instead, assuming the references provide their scrolling features in different circumstances, Patent Owner disagrees with Petitioner’s argument that a person of ordinary skill in the art would have considered it advantageous to combine the references’ disclosures. *E.g.*, PO Resp. 48–53. Petitioner contends that a person of ordinary skill in the art would have viewed the references’ scrolling features as complementary, such that including both would have advantageously provided greater functionality for the user. Pet. 22–25; Pet. Reply 16, 18–19. Patent Owner counters that a person of ordinary skill in the art would have considered it redundant and confusing to implement both references’ scrolling feature in one system. PO Resp. 48–53.

Weighing the parties’ arguments and evidence on this point, we find Petitioner’s more persuasive. As noted above, Ji teaches advantages to its scrolling function, including “mak[ing] it convenient for the user.” Ex. 1006 ¶ 92. Likewise, Sarafa discloses advantages to its scrolling function, explaining, for example, that “[m]aking available the context of a quoted message may benefit a user in understanding a quoted message by providing messages that were displayed before and/or after the quoted message so as to play the quoted message in context.” Ex. 1007 ¶ 90. We find these disclosures, in combination with Dr. Cockburn’s testimony and Petitioner’s other evidence provide significant persuasive support for Petitioner’s position that a person of ordinary skill in the art would have considered it advantageous to combine the references’ teachings. Pet. 20–24; Pet. Reply 16–19; Ex. 1003 ¶¶ 80–86; Ex. 1018 ¶¶ 65–76. By comparison, we

find Patent Owner's evidence, such as Dr. Almeroth's testimony about redundancy and confusion, less persuasive, particularly because Dr. Almeroth does not cite persuasive evidence for his concerns about redundancy and confusion. *See, e.g.*, PO Resp. 48–53; Ex. 2004 ¶¶ 154–160.

For the foregoing reasons, we find that Petitioner demonstrates by a preponderance of the evidence that a person of ordinary skill in the art would have been motivated to combine the teachings of Ji and Sarafa. Additionally, we consider it worth noting that we would reach the same result even if we agreed with Patent Owner that a person of ordinary skill in the art would have disregarded Ji's paragraph 92.

(b) Whether the Combination Would Use Ji's Operation Bar, Rather Than Its Single-Step Approach

In its Response, Patent Owner argues that, even if it was obvious to add Sarafa's scroll back feature to Ji's system, a person of ordinary skill in the art would have implemented the modification in a manner that would not meet all of the limitations of the independent claims of the '192 patent. PO Resp. 53–57. Patent Owner argues that Ji discloses two mutually exclusive approaches for a user to reply to a message. *Id.* at 54–55. In the “message operation bar” approach, when a user touches the “screen location corresponding to a first chat message,” the system presents a message operation bar with selectable actions, including “reply.” *Id.* at 54 (citing Ex. 1006 ¶ 84). In the alternative “single touch” approach, Patent Owner explains, “after a user touches the screen location corresponding to the message, a reply ‘message input dialog box’ ‘directly pops up.’” *Id.* (citing Ex. 1006 ¶ 44).

Patent Owner argues that Ji's message operation bar approach "would easily accommodate additional functions, such as [the scroll back feature that Dr. Cockburn proposes to add from Sarafa]." *Id.* at 55. Combining Sarafa's scroll back feature with Ji's message operation bar approach could involve adding a "menu choice 'Goto Original Message'" to Ji's message operation bar, Patent Owner suggests. *Id.*

In contrast, "[a] skilled artisan looking to add additional functionality to the message selection of Ji would not—and could not—use the 'single touch' alternative of Ji, which provides for a single function—a pop-up reply input dialog box," Patent Owner contends. *Id.* According to Patent Owner, "Ji's 'single touch' alternative makes the entirety of a displayed message into a control for activating the reply function," which precludes using Sarafa's approach of scrolling back in response to a user touching the message. *Id.* at 56.

Patent Owner adds that "Dr. Cockburn hypothesizes a 'user's selection of the quoted message within the reply message,'" but "Ji does not provide for such a selection." *Id.* (citing Ex. 1003 ¶ 86). Patent Owner also argues that "Dr. Cockburn appears to be hypothesizing numerous unstated changes to Ji to accommodate touches on different portions of a reply message with different results, but none of these modifications are described in Ji and would run counter to Ji's teaching." *Id.* at 57.

Patent Owner argues that, rather than make such additional modifications to allow using Sarafa's scroll back feature with Ji's "single-touch" approach, a person of ordinary skill in the art would use Ji's message operation bar approach to accommodate Sarafa's scroll back. *Id.* Patent Owner argues that the resulting system would not meet the challenged

claims' limitations. *Id.* at 53–54. Patent Owner notes that the Petition relies on Ji's single-touch approach for limitations 1[b]/16[d]/24[b], "which require[] displaying a text entry box 'directly responsive to receiving, through a user interface of said device, a single click or touch screen gesture.'" *Id.* at 53. But "the Petition and Dr. Cockburn failed to appreciate that the 'single touch' alternative cannot accommodate the message-based functionality added to Ji in the proposed combination," Patent Owner argues. *Id.* "[B]ecause the combination would use the message operation bar, the combination would no longer be responsive to a 'single click or touch screen gesture' as required by limitation 1[b]/16[d]/24[b]," Patent Owner adds. *Id.* at 53–54. According to Patent Owner, "[t]hus, even though Ji discloses a 'single touch' embodiment, that embodiment would not be used by a skilled artisan in the combination." *Id.* at 54.

In its Reply, Petitioner disputes Patent Owner's contention that Sarafa's scroll back is incompatible with Ji's single-touch approach. Pet. Reply 20. Asserting that Patent Owner considers Ji's disclosures in isolation, Petitioner argues that "Sarafa discloses message bubbles with multiple segments that a [person of ordinary skill in the art] would have been able to use to implement different features." *Id.* Additionally, Petitioner argues that Patent Owner does not consider the knowledge of a person of ordinary skill in the art. *Id.*

Addressing Patent Owner's arguments that a person of ordinary skill in the art would have had reasons to use Ji's message operation bar, Petitioner argues that "motivation to combine does not require the resulting combination to be the most preferred or most desirable prior art combination available." *Id.* at 19–20 (citing *In re Fulton*, 391 F.3d 1195, 1200 (Fed. Cir.

2004)). Petitioner further argues that Ji does not express a preference for the message operation bar approach. *Id.* at 20.

In its Sur-reply, Patent Owner maintains that only Ji's message-operation bar approach would accommodate adding a function, such as Sarafa's scroll back function. PO Sur-reply 14. Patent Owner also disputes Petitioner's argument that Sarafa discloses "message bubbles that include multiple segments that a [person of ordinary skill in the art] would have been able to use to implement different features." *Id.* at 15 (quoting Pet. Reply 20). Patent Owner argues that "[n]owhere does Sarafa teach or suggest using multiple segments to implement different features." *Id.* Patent Owner notes that "Sarafa, ¶72 states that 'at least some portion of the quoted portion 360 may comprise a control' and it may be 'the entirety of the quoted portion 360.'" *Id.* But, Patent Owner argues, "[n]owhere does Sarafa say other portions may be controls providing different functions." *Id.* Patent Owner also asserts that "Dr. Almeroth testified that a [person of ordinary skill in the art] would not have placed a redirection control next to a reply control due to the risk of a user making an undesired selection." *Id.*

Weighing the parties' arguments and evidence, Petitioner persuades us that a person of ordinary skill in the art would have been motivated to use Sarafa's scroll back feature in combination with Ji's single-touch approach. As discussed above in Section III.C.4.b).(4).(b), Petitioner persuades us that a person of ordinary skill in the art would have understood that adding Sarafa's scroll back feature to Ji would have provided certain benefits. Those motivating benefits would apply with either Ji's single-touch approach or Ji's message operation bar approach. And Petitioner persuades us that that Ji would have conveyed to a person of ordinary skill in the art no

preference between its message operation bar approach and its single-step approach. Pet. 32–34; Pet. Reply 20; Ex. 1003 ¶¶ 110–113; Ex. 1018 ¶¶ 77–79.

Petitioner also persuades us that, in view of the disclosures of Sarafa and Ji considered together, a person of ordinary skill in the art would have recognized that Sarafa’s scroll back feature and Ji’s single-touch approach lend themselves to harmonization. Although Ji does not expressly disclose using a subset of a displayed message to trigger an action, Sarafa does. Specifically, Sarafa teaches limiting the interface for its scroll back feature to just quoted portion 360 inside of message bubble with quote 350. Ex. 1007 ¶¶ 70, 72. This and Dr. Cockburn’s testimony support Petitioner’s argument that “Sarafa discloses message bubbles with multiple segments that a [person of ordinary skill in the art] would have been able to use to implement different features.” Pet. Reply 20 (citing Ex. 1007 ¶¶ 70, 72; Ex. 1018 ¶¶ 80–81).

Patent Owner says this is “wrong.” PO Sur-reply 15. But Patent Owner’s reasoning does not demonstrate any error in Petitioner’s assertion. Patent Owner explains that Sarafa does not disclose *actually using* different message portions to trigger different actions. *Id.* That does not refute Petitioner’s argument that Sarafa teaches different message segments. Nor does it refute Petitioner’s argument that a person of ordinary skill in the art would have been motivated and able to use different segments to implement different features.

By disclosing that only the quoted message portion triggers scroll back, Sarafa demonstrates that it was within the skill in the art to implement a function (either Sarafa’s scroll back feature or Ji’s single-touch approach)

using a subset of a displayed message. Ex. 1007 ¶¶ 70, 72. This approach leaves other portions of the displayed message available for other functions, such as Ji’s single-touch approach for triggering a reply. As Dr. Cockburn testifies, nothing in Ji compels reserving the entirety of the displayed message for activating the its single-touch approach to replied. *E.g.*, Ex. 1018 ¶ 80; Ex. 1006 ¶ 44. On the whole, Petitioner’s arguments and evidence persuade us that a person of ordinary skill in the art would have had the ability and motivation to add Sarafa’s scroll back feature to Ji’s single-touch approach by using the quoted message portion to trigger scroll back, while using another part of the message to implement Ji’s single-touch approach for a reply. Pet. 15–18, 20–24, 50–53; Pet. Reply 19–21. As noted above, citing Dr. Almeroth’s testimony, Patent Owner argues a person of ordinary skill in the art would avoid such an approach because of “the risk of a user making an undesired selection,” but Patent Owner does not cite persuasive supporting evidence. PO Sur-reply 15 (citing Ex. 2004 ¶¶ 217–218). Nor does Dr. Almeroth cite objective support for this opinion. Ex. 2004 ¶¶ 217–218.

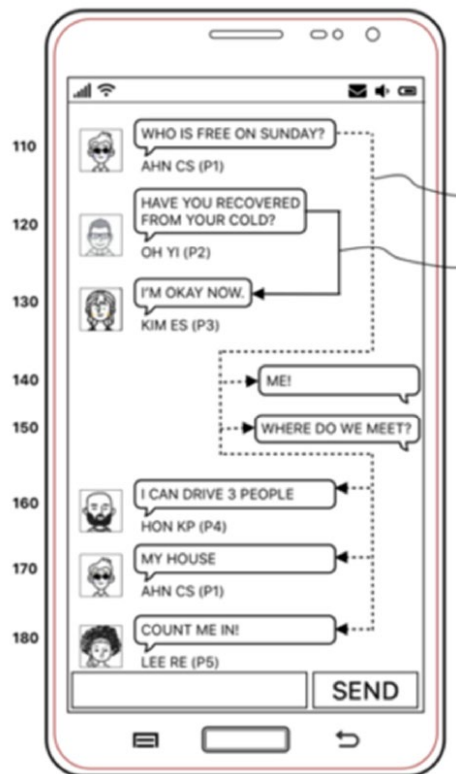
Thus, we do not agree with Patent Owner’s position that the only embodiment of Ji that a person of ordinary skill in the art would have considered using with Sarafa’s redirection feature is Ji’s message operation bar approach. PO Sur-reply 14. As Petitioner observes, even if adding Sarafa’s scroll back to Ji’s single-touch approach would not have been the most desirable combination, that does not negate Petitioner’s persuasive arguments and evidence that it would have been an obvious combination. *See In re Fulton*, 391 F.3d at 1200; Pet. Reply 19–20.

*(5) Whether Petitioner Shows Motivation to
Combine Oh with Ji and Sarafa*

In its Response, Patent Owner argues that “a skilled artisan would not have been motivated to modify any alleged Ji/Sarafa combination based on Oh.” PO Resp. 6. Patent Owner contends that “Oh works in a fundamentally different manner than Ji—and in a manner that is incompatible with Ji.” *Id.* at 57. Patent Owner asserts that

Oh’s approach of visually linking messages through use of a simple link line (or link symbol such as “x” or “y” as shown in Figure 11) is substantially different from presenting reply information for individual messages. In Oh’s approach, reply information is not available to the user once three or more messages are part of a conversation because in Oh, there is one line or one symbol per conversation.

Id. at 59. In support of this argument, Patent Owner presents a modified version of Oh’s Figure 10, which is reproduced below. PO Resp. 60–61.



Patent Owner explains that “[i]n this modified version of Figure 10 of Oh, Oh’s link line does not inform the user whether message 180 is a reply to message 160, a reply to 110, or a reply to any other message for that matter.” *Id.* at 61. Patent Owner contends that “Oh’s approach reintroduces the very problem that Ji is designed to resolve (the problem of not knowing the text of the message that triggered the reply).” *Id.* at 60.

Patent Owner also argues that Oh does not disclose any benefit of a “non-modal” design. PO Resp. 61–66. Patent Owner contends that “even if Oh **used** a non-modal design (and it does not, as will be explained), Oh still does not **teach** a skilled artisan why it is allegedly preferable over alternatives.” *Id.* at 62–63. Patent Owner adds that “in fact, Oh is not a ‘non-modal’ design.” *Id.* at 63. Additionally, Patent Owner argues that Petitioner and Dr. Cockburn use the terms “modal” and “non-modal” inaccurately when discussing the prior art. *Id.* at 63–64. Patent Owner also argues that “Dr. Cockburn does not discuss the dialog box that is in Oh.” *Id.* at 65. Patent Owner adds that “[t]here is no indication that Oh implements this dialog box as a ‘non-modal’ dialog box.” *Id.* at 66.

In its Reply, Petitioner argues that, contrary to Patent Owner’s arguments, Ji, Oh, and Sarafa have complementary teachings. Pet. Reply 21–23. Asserting that Patent Owner’s improperly premises its arguments on bodily incorporation, Petitioner argues that “[l]ike Ji and Sarafa, Oh addresses problems relating to messaging overload on mobile devices.” *Id.* at 21–22. Additionally, Petitioner argues that Patent Owner assumes constraints, such as a single link line per conversation, that are not disclosed by Oh. *Id.* at 22–23. Explaining that the motivation to combine does not have to come from the prior art itself, Petitioner also asserts that a

person of ordinary skill in the art would have recognized benefits of modifying Ji and Sarafa based on Oh. *Id.* at 24–25 (citing *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (citing *KSR Intern. Co. v. Teleflex Inc.*, 550 U.S. 398, 415–22 (2007))).

In its Sur-reply, Patent Owner maintains that “Oh is not relevant to Ji or Sarafa.” PO Sur-reply 18. Patent Owner elaborates that “Oh is concerned with distinguishing conversations rather than identifying and preserving reply relationships.” *Id.* Patent Owner also maintains that “Oh does not actually disclose multiple message reply . . . and does not provide any relevant ‘non-modal’ teachings.” *Id.* at 19. Patent Owner also argues that Oh uses a persistent input field, which is irrelevant to Ji’s dialog box. *Id.* at 22–23.

Weighing the parties’ arguments and evidence, we find Petitioner’s position more persuasive than Patent Owner’s. As discussed above in Section III.C.4.b).(3), Petitioner persuades us that a person of ordinary skill in the art would have understood Oh teaches providing a user with the capability to select multiple messages for reply. Given this disclosure, along with Ji’s disclosure of continuing to display other messages during generation of a reply message, we agree with Petitioner that a person of ordinary skill in the art faced a binary decision to configure the system to either enable multiple message reply or prevent multiple message reply. Pet. 39–40; Pet. Reply 11–12.

In combination with this, Petitioner cites Dr. Cockburn’s testimony that “[b]y enabling users to link to multiple messages in a reply, users can more efficiently communicate by identifying multiple messages to which the reply relates.” Ex. 1003 ¶ 92; Pet 25–26. Such a benefit would have

motivated a person of ordinary skill in the art to further modify the combination of Ji and Sarafa to provide the capability for a user to continue interacting with additional messages while the message creation interface is displayed.

Patent Owner does not persuasively rebut Petitioner's evidence that, in view of Oh's disclosure of providing the capability for a multiple message reply, a person of ordinary skill in the art would have recognized benefit in adding such a capability to the combination of Ji and Sarafa. Patent Owner argues that Petitioner's proposed modification would have defeated Ji's objective of indicating to which message someone is replying. *E.g.*, PO Resp. 60–61. But that argument assumes that Petitioner's combination removes the quoted text that Ji uses to identify the reply relationship. *See, e.g., id.* Contrary to that assumption, the Petition explains Petitioner's proposed combination of Ji, Sarafa, and Oh as follows:

[a person of ordinary skill in the art] would have been motivated to improve the messaging system resulting from the combination of Ji and Sarafa—which embeds a quoted portion of an original message into a reply message—by incorporating Oh's feature that enables the user to continue interacting with messages during display of a text input box by including multiple messages in the reply.

Pet. 24. Because Petitioner's proposed combination retains the quoted text feature disclosed by Ji, we find that it would not have obscured the reply relationship in the manner Patent Owner suggests.

Patent Owner also argues that “Oh does not provide any ‘teaching’ of the benefits of a ‘non-modal’ design.” PO Resp. 62. This too fails to persuasively rebut Petitioner's argument that a person of ordinary skill in the art would have recognized that providing the capability for multiple message

replies would have benefits. To the extent it is accurate, Patent Owner's argument only demonstrates that Oh itself does not expressly recite a benefit, which does not rebut Petitioner's evidence of a recognized benefit. *See Randall*, 733 F.3d at 1362.

Patent Owner also argues extensively that Petitioner and Dr. Cockburn use the terms "modal" and "non-modal" incorrectly when referring to the prior art, including Oh. PO Resp. 61–66; PO Sur-reply 23–25. Even if there are some imperfections in Patent Owner's and Dr. Cockburn's understanding of what exactly "modal" and "non-modal" mean, that does not negate that Oh discloses multiple message reply capability. Nor does it negate that a person of ordinary skill in the art faced the binary question of whether to enable or prevent multiple message reply. In view of that, Patent Owner's arguments (about whether Oh teaches modal or non-modal interfaces and which interface belongs to which category) are not persuasive to rebut Petitioner's showing that it would have been obvious in view of Oh to further modify the combination of Ji and Sarafa to enable a multiple message reply.

*(6) Whether Petitioner Shows Obviousness to
Combine Oh with Ji and Sarafa in a Manner
that Meets the Claims*

In its Response, Patent Owner argues that

[a]s discussed earlier with regard to adding functionality to Ji from Sarafa, a skilled artisan would recognize that Ji offers two alternatives to activate the reply functionality: (a) a message operation bar where a reply is one of a number of functions possible upon interaction with a message, and (b) a stripped-down ("single touch") alternative where a user touches the screen location corresponding to a message and the software "directly pops up a [reply] message input dialog box.

PO Resp. 67. As with the dispute regarding Petitioner's proposed combination of Sarafa with Ji, Patent Owner argues that a person of ordinary skill in the art would understand that only Ji's message operation bar approach makes sense for adding another feature, such as for adding features from Oh.

For the reasons discussed above in Section III.C.4.b).(4).(b), Petitioner persuades us otherwise.

c) Conclusion Regarding Claims 1–9, 11–20, 22–28, and 30

Petitioner supports its position that claims 1–9, 11–20, 22–28, and 30 would have been obvious over Ji, Sarafa, Oh by explaining in detail its position that it would have been obvious to combine Ji's, Sarafa's, and Oh's teachings, as well as its position that, in combination, the references teach every limitation of independent claims claims 1–9, 11–20, 22–28, and 30. Pet. 14–72. Having reviewed all of the parties' arguments and evidence, we find Petitioner has demonstrated by a preponderance of the evidence that claims 1–9, 11–20, 22–28, and 30 of the '192 patent would have been obvious over Ji, Sarafa, and Oh. Pet. 4–72; PO Resp. 6–69; Pet. Reply 1–25; PO Sur-reply 4–25.

IV. CONCLUSION¹¹

In summary:

Claims	35 U.S.C. §	Reference(s) /Basis	Claims Shown Unpatentable	Claims Not Shown Unpatenta ble
1–9, 11–20, 22–28, 30	103	Ji, Sarafa, Oh	1–9, 11–20, 22–28, 30	
Overall Outcome			1–9, 11–20, 22–28, 30	

V. ORDER

In consideration of the foregoing, it is:

ORDERED that claims 1–9, 11–20, 22–28, and 30 have been shown, by a preponderance of the evidence, to be unpatentable;

FURTHER ORDERED that Patent Owner’s Motion to Strike is denied-in-part and dismissed-in-part; and

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.

¹¹ 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. 16,654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

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