

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ZOOM COMMUNICATIONS, INC.
Petitioner

v.

RICOH COMPANY, LTD.
Patent Owner

IPR2026-00424

**PETITION FOR INTER PARTES REVIEW
OF U.S. PATENT NO. 10,909,059**

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PETITIONER's EXHIBIT LIST

No.	Reference	Referred To As
1001	U.S. Patent No. 10,909,059	'059 Patent
1002	Prosecution History of U.S. Patent No. 10,909,059	'059 Patent File History
1003	Declaration of Dr. Kevin Almeroth	Almeroth Decl.
1004	U.S. Patent No. 9,113,032	Vander Mey
1005	U.S. Patent App. Pub. No. 2010/0302346	Huang
1006	U.S. Patent No. 6,573,926	Ichimura
1007	U.S. Patent App. Pub. No. 2006/0248210	Kenoyer
1008	U.S. Patent No. 6,346,963	Katsumi
1009	U.S. Patent App. Pub. No. 2007/0291108	Huber
1010	U.S. Patent App. Pub. No. 2008/0069011	Sekaran
1011	U.S. Patent No. 8,769,001	Ohwada
1012	U.S. Patent No. 8,949,593	Nakagawa
1013	U.S. Patent No. 11,546,548	Kato '548
1014	U.S. Patent App. Pub. No. 2013/0169742	Wu
1015	U.S. Patent App. Pub. No. 2014/0114664	Khan
1016	Adobe Connect Enterprise User Guide	Adobe User Guide
1017	LifeSize Multipoint User Guide	LifeSize User Guide
1018	GoToWebinar's 2012 Organizer Quick Start Guide	GoToWebinar Quick Start Guide

LISTING OF CHALLENGED CLAIMS

1.	A transmission terminal performing a video conference with a plurality of transmission terminals, the transmission terminal comprising:
[1.a]	processor processing circuitry configured to display, on a screen of the transmission terminal, information concerning a total number of transmission terminals participating in the video conference,
[1.b]	and display, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other,
[1.c]	wherein a number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal is smaller than the total number of transmission terminals participating in the video conference.
2.	The transmission terminal according to claim 1, wherein the processing circuitry is configured to display information concerning names or identification information of transmission terminals performing the video conference.
3.	A transmission terminal performing a video conference with a plurality of transmission terminals, the transmission terminal comprising:
[3.a]	processing circuitry configured to display, on a screen of the transmission terminal, information concerning a total number of transmission terminals participating in the video conference,
[3.b]	and display, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other,
[3.c]	Wherein the total number of transmission terminals participating in the video conference is greater than a number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal.
4.	A method implemented by a transmission terminal performing a video conference with a plurality of transmission terminals, method comprising:

[4.a]	displaying on a screen of the transmission terminal, information concerning a total number of transmission terminals participating in the video conference,
[4.b]	and displaying, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other,
[4.c]	wherein a number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal is smaller than the total number of transmission terminals participating in the video conference.
5.	The method according to claim 4, further comprising: displaying information concerning names or identification information of transmission terminals performing the video conference.
6.	A method implemented by a transmission terminal performing a video conference with a plurality of transmission terminals, the method comprising:
[6.a]	displaying, on a screen of the transmission terminal, information concerning a total number of transmission terminals participating in the video conference,
[6.b]	and displaying, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other,
[6.c]	wherein the total number of transmission terminals participating in the video conference is greater than a number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal.

I. INTRODUCTION

Petitioner requests *inter partes* review and cancellation of claims 1-6 of U.S. Patent 10,909,059 (“the ’059 Patent”) (EX1001). Claims 1-6 should never have issued. They do not claim a new conferencing architecture, codec, server, terminal, or algorithm. They claim the ordinary user-interface result of a multi-party video conference: when more participants are in the conference than can usefully be shown on one screen, display fewer than all participants’ video feeds and also provide information concerning the total number of participants. EX1001, claims 1-6.

The ’059 Patent’s own disclosure confirms how little is being claimed. The patent admits that multi-party video conferencing using transmission terminals was already known, including divided screen areas for displaying participating terminals. EX1001, 1:~~29-5935-50~~, 2:1-7. The only identified difficulty was predictable: as technology permitted increasing the number of participants, the image areas became smaller, and a user might want participant-count information without switching away from the video display. EX1001, ~~1:65-2:910-25~~, 23:55-67. The ’059 patent’s answer was equally modest—show the total number of “bases” in an auxiliary area while displaying the video feeds that fit on the screen. EX1001, 24:1-28, 25:17-26, FIGS. 18-20.

The prior art did exactly that. Vander Mey discloses a video-conference computing device that receives image data from multiple participants, displays only

selected participant video feeds, overlays participant information, and tracks how many total participants the conference has—including the simple example of displaying only two of six participants. EX1004, 4:~~46-5:4025-65~~, ~~6:49-7:26:10-35~~, 14:52-61, 17:1~~7-25~~; EX1003, ¶¶60-62. Huang independently discloses the same common-sense approach at scale: in a conference of up to 100 participants, the client displays only a subset of participant videos at a time, with participant names, search, and page navigation conveying the broader participant population. EX1005, [0009], [0021], [0025], [0028]; EX1003, ¶¶103-105.

Ichimura provides an express numerical participant count. It teaches a conference-terminal interface that displays “the number and profiles of the participants currently attending the conference.” EX1006, 6:29-37. Simply adding this numerical display to Vander Mey’s existing overlay would have required only routine graphical-interface implementation, particularly because Vander Mey already tracks the total participant count and already provides an on-screen overlay for conference-related information. EX1004, 14:55-61, 17:1~~7-25~~; EX1006, 6:29-37; EX1003, ¶¶136-146. The challenged claims therefore cover no more than a familiar, predictable arrangement of known video-conferencing interface features, and therefore Petitioner respectfully requests institution of review and cancellation of claims 1-6.

II. TECHNOLOGY BACKGROUND

The technology of the challenged patent—a video conference system in which a centralized management apparatus tracks participating terminals, stores their identification information, and relays it for display during an active session—was thoroughly developed and widely practiced well before the earliest priority date. EX1003, ¶28.

A. Multi-Party Video Conferencing Was Well Known

Video conferencing systems enabling multi-party communication over IP networks were commercially available and widely deployed by the early 2000s. As Huang explained, “the evolution of the internet and World Wide Web has made web conferencing an attractive option for people to meet online, to have video, voice, and text communications, and to view and collaborate on the same document remotely.” EX1005, [0002]. These systems typically comprised multiple endpoint terminals equipped with cameras, microphones, and displays, connected through an IP network to a centralized server or multipoint control unit (“MCU”) that managed the distribution of audio and video data. EX1007, [0005]; EX1008, 1:21–30. EX1003, ¶29.

B. Displaying Participant Information During Active Conferences

POSITAs understood how to display participant information during an active video conference. Prior art systems offered multiple display modes to address the

inherent tension between showing video imagery and conveying conference attendance data. EX1003, ¶30.

Full-screen display modes divided terminal screens into image areas—typically one larger primary area and multiple smaller secondary areas—to show video feeds from participating terminals. EX1007, [0006], FIG. 1a; EX1008, 3:60–4:5. EX1003, ¶31.

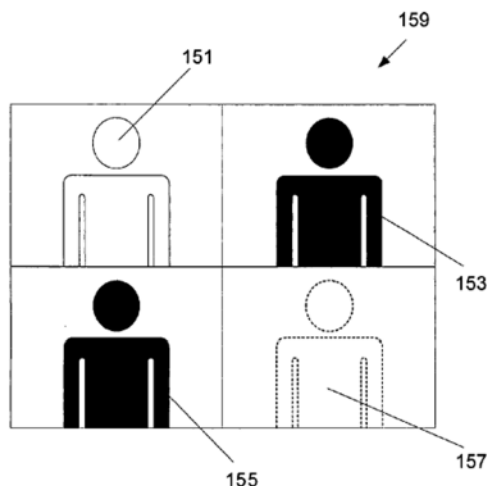


FIG. 1a
(Prior Art)

Information display modes: participant information was displayed during active conferences, including participant names, endpoint numbers, participant counts, participant roles, and connection status. EX1016, pp. 34, 63–65; EX1017, pp. 87–93. The problem of diminishing image size as participants increased was expressly recognized: when “the number of transmission terminals attending the

conference increases,” the “display area for displaying an image transmitted from each transmission terminal is reduced,” making it impossible for users to “grasp which transmission terminal is attending the conference.” EX1013, ~~1:42–572:1–10~~; EX1003, ¶32.

Solutions to this problem were abundant. Huang disclosed paginated displays dividing participants across multiple screen pages, each showing a subset of video images that users could navigate. EX1005, [0009]. Vander Mey disclosed dynamically selecting a subset of participants for display based on participation ratings derived from conversation properties, with an overlay showing participant lists and interactive options. EX1004, 16:55–17:20, FIG. 4. Wu disclosed selecting active participants for display based on participation properties and resource constraints, enabling conferences with “unlimited” participants even though only a subset appeared on screen. EX1014, [0013], [0045], [0055]. Khan disclosed generating and distributing lists of recent dominant speakers to update each participant’s display. EX1015, [0007]–[0010], [0058]–[0059], [0070]–[0075]; EX1003, ¶33.

C. Conference Attendance Tracking and Session Establishment

The process of establishing a session, tracking attendance, and responding to terminal information requests was standardized across prior art systems. When a terminal wished to initiate a conference, it sent attendance request information—

including its terminal ID and the destination terminal's ID—to the management apparatus. The management apparatus updated the terminal's state, coordinated relay device selection, established image and sound sessions, and propagated state change information to other participants. EX1012, FIGS. 20A–20B; EX1011, FIGS. 27–30B; EX1003, ¶34.

Videoconference management systems also used known sequences to determine participant lists: a requesting terminal requested a candidate list, the management system extracted terminal IDs and terminal names, sent candidate-list and operation-state information, and the terminal displayed names and status icons for candidate terminals. EX1011, 26:54–27:12, 30:55–31:20, FIG. 26; EX1003, ¶35.

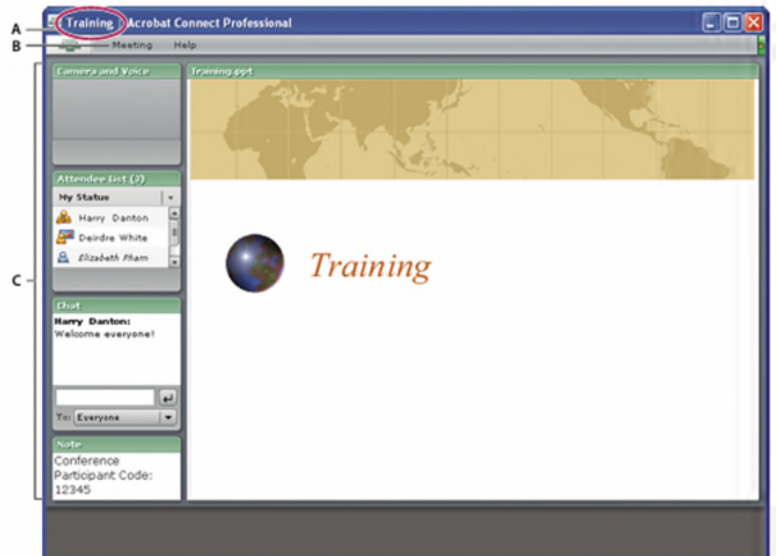
Dynamic updating when participants joined or departed was likewise well known. Prior art systems automatically propagated updated attendance information, enabling real-time awareness of conference composition without manual user intervention. EX1009, [0006] (disclosing signaling “only the difference” when a conference state changes); EX1007, [0007]; EX1003, ¶36.

Commercial conferencing products reflected the same design practice. Adobe Connect Enterprise allowed users to conduct real-time online meetings in which hosts could show presentations, share screens, and broadcast live audio and video to attendees, and Adobe's meeting-management documentation describes an Attendees

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pod for managing the list of attendees, roles, permissions, and attendee information during the meeting. EX1016, p. 34; EX1003, ¶37.



A participant's view of the Stage
A. Meeting name B. Participant menu bar C. Pods

Adobe Connect documentation further confirms that participant capacity and participant counts were tracked in meeting systems, including by reporting concurrent meeting participants and enforcing attendee limits when a meeting room was full. EX1016, pp. 43–44, 218–220; EX1003, ¶37.

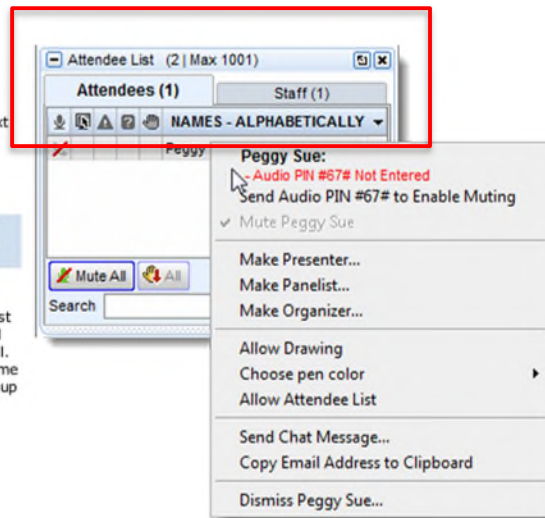
GoToWebinar's 2012 Organizer Quick Start Guide likewise shows that webinar organizers managed large online sessions with up to 1,000 attendees and could view statistics including the number of registrants versus attendees. EX1018, p. 4; EX1003, ¶38.

Manage Attendee Audio

Attendees who join the audio portion of your Webinar are joined muted by default. Attendees joined via VoIP will have a Microphone icon next to their name. Attendees joined via telephone will have a Telephone icon next to their name.

Note: Up to 25 attendees can be unmuted at any one time (this is a combination of VoIP and phone attendees).

Attendees who join the webinar via Telephone must enter their Audio PIN so that the organizer has full audio controls through the Organizer Control Panel. If not entered, you can right-click the person's name and select **Send Audio PIN**. This will send a pop-up message with the Audio PIN to that person.



LifeSize documentation also confirms that multipoint video conferencing systems managed conferences by participant capacity and displayed or tracked participant-related meeting information, including active-meeting status and participant lists. EX1017, pp. 87-93; EX1003, ¶39.

Figure 2-2 Conference Control Interface Elements

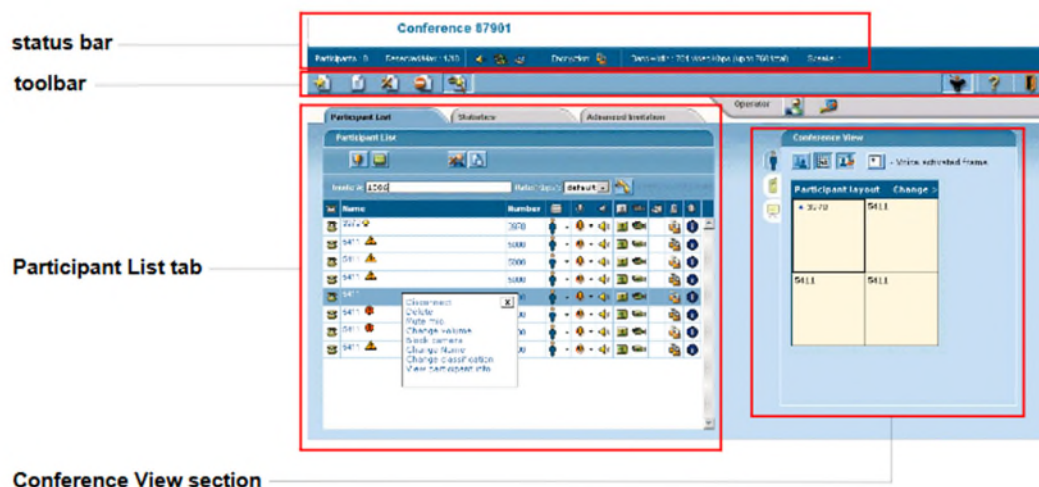
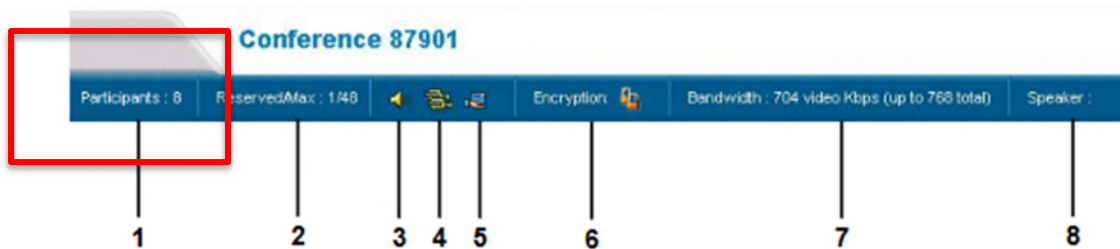


Figure 2-3 Conference Control Status Bar



These disclosures demonstrate that displaying participant information during an active conference—including the total number of current participants—was not inventive. A POSITA designing a video conference interface would have understood that, when a system displays only a subset of participant video feeds, the user benefits from separate information identifying the total participant population. EX1003, ¶40. This was particularly true for large conferences, where only a limited number of participants could practically be displayed on a screen at one time. EX1003, ¶40.

In sum, by the time of the alleged invention, POSITAs were familiar with the functionality relevant to the '059 Patent: tracking terminal states, storing identification data, providing participant information, and displaying that information on terminal screens during active video conferences. Those functions were not inventive; they were ordinary conferencing-system features. EX1003, ¶41.

III. '059 PATENT

A. Overview

The '059 Patent claims nothing more than a video conference terminal that displays video from fewer than all conference participants and shows information concerning the total number of participants. EX1001, claims 1, 3-4, 6. EX1003, ¶42.

The '059 Patent's own Background section concedes that multi-party video conferencing using transmission terminals was already well-known. EX1001, 1:35-50. The patent acknowledges that "each transmission terminal divides an image area of a display of the transmission terminal into divisions corresponding to transmission terminals which have participated in the video conference, and displays participants in the respective division image areas." EX1001, 1:47-532:1-7. The patent identifies only one narrow problem: when the number of conference participants grows large, the divided display areas become too small for a user to identify who is attending, and the user cannot know the total number of participants without switching away from the video display into a separate information mode. EX1001, 2:10-25, 23:55-67. EX1003, ¶43.

The patent's solution is straightforward. Rather than requiring the user to switch display modes to learn how many participants are in the conference, the terminal displays information concerning the total number of participants, e.g., the participant count in a small auxiliary area overlaid on the video display. EX1001,

24:1-10; FIG. 18. The auxiliary area is a belt-like strip at the edge of the screen that shows, among other things, the total number of “bases” (i.e., participating terminals) alongside the video feeds. EX1001, 24:10-28. When the number of participants exceeds the number of video feeds that can fit on screen, the user can still see the total count in the auxiliary area without leaving the full-screen video mode. EX1001, 25:17-26; FIGS. 19-20. EX1003, ¶44.

That is the entire alleged invention. The terminal displays video from a subset of participants. It displays information concerning the total participant count. The information is visible even when the number of participants exceeds the display capacity. But as the prior art demonstrates, every one of these features was already known. Displaying video from a selected subset of conference participants was standard practice in systems from Google, Cisco, LifeSize, and others. Displaying participant counts and participant lists during video conferences was equally routine. The '059 Patent adds nothing beyond the combination of these well-known elements in their predictable arrangement. EX1003, ¶¶28-41.

B. Prosecution History

U.S. Patent Application No. 16/654,752 was filed on October 16, 2019, as a continuation of U.S. Patent Application No. 15/277,069, filed on September 27, 2016, which is itself a continuation of PCT/JP2015/060144, filed on March 31, 2015. EX1001; EX1003, ¶45. The application was initially filed with a single claim to a

transmission terminal whose processor requests the number of terminals currently transmitting, and whose display shows image data from one or more transmitting terminals along with the received count. EX1002, 8; EX1003, ¶45.

In a Non-Final Office Action dated March 3, 2020, the Examiner rejected the pending claim for nonstatutory double patenting over claim 1 of U.S. Patent No. 10,503,676 (the “’676 Patent”) and also rejected claim 1 as anticipated by U.S. Patent Publication No. 2012/0182384 (“Anderson ’384”) under 35 U.S.C. §102. EX1002, 185-189; EX1003, ¶46. The Examiner noted U.S. 2013/0242033 (“Kato”), as pertinent prior art but did not rely on it. EX1002, 189; EX1003, ¶46.

On June 3, 2020, the Applicant amended claim 1 and added new claims 2-6. Amended claim 1 recited that the transmission terminal conducts a video conference with multiple terminals, includes processing circuitry that displays information concerning the total number of participating terminals, and shows on its screen a subset of image data from participating terminals fewer than the total number of participants. EX1002, 201; EX1003, ¶47.

Claim 1 (Currently Amended): A transmission terminal performing a video conference with a plurality of transmission terminals, the transmission terminal comprising:

~~at least one processor~~ processing circuitry configured to

~~transmit a terminal information request to request the display, on a screen of the transmission terminal, information concerning a total number of transmission terminals participating in the video conference, and display, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other, wherein~~ under transmission to a transmission management apparatus, managing a plurality of transmission terminals, connected via a network; and

~~display~~ the number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal is smaller than the total number of transmission terminals participating in the video conference

~~image data received from one or more of the transmission terminals under transmission on a display device, and display the number of the transmission terminals under transmission received from the transmission management apparatus in response to the terminal information request on the display device.~~

EX1002, 201.

In response, the Applicant admitted that Anderson '384, according to Fig. 13a, discloses “the number of participants of a remote conference (1311 Participant Count) and the names of the participants are displayed on the right side of a display screen, and images of persons currently speaking from among the participants of the remote conference are displayed on the top left of the display screen (1314 Speaker indicator).” EX1002, 208.

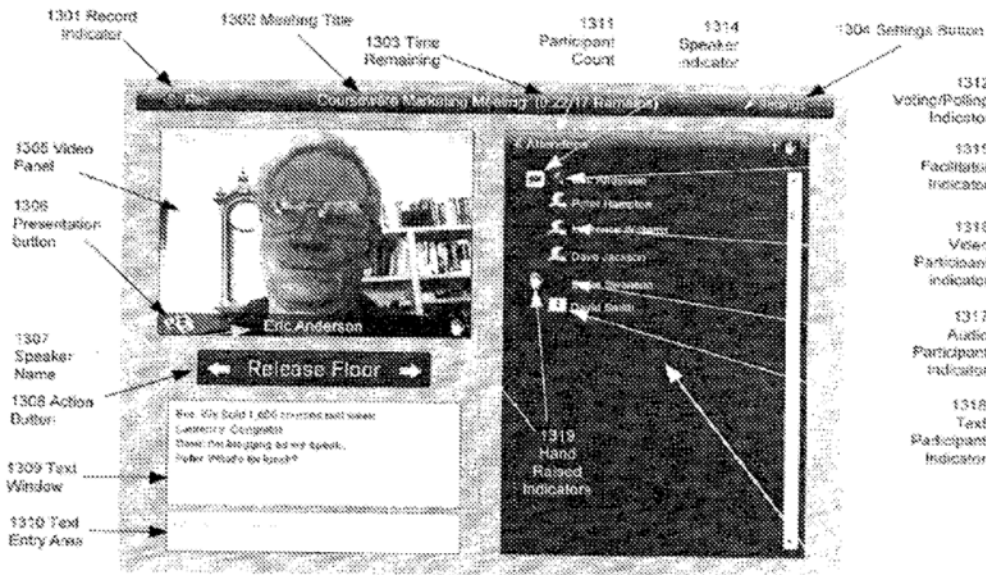


Figure 13a: Alternate Interface Embodiment

Id. Notwithstanding this concession, the Applicant argued that Anderson ‘384 allegedly fails to disclose amended claim 1’s limitation of displaying a subset of the image data of the total participating transmission terminals. EX1002, 209.

On June 25, 2020, the Examiner issued a Final Rejection based on nonstatutory double patenting, but otherwise indicated allowable subject matter. EX1002, 219-220; EX1003, ¶48. In “Allowable Subject Matter,” the Examiner stated that claims 1-6 appear allowable because the prior art of reference does not teach or suggest “a transmission terminal comprising processing circuitry configured to display, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other, wherein the number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen

of the transmission terminals is smaller than the total number of transmission terminals participating in the video conference.” EX1002, 227-228; EX1003, ¶48.

On September 11, 2020, the Examiner issued a Notice of Allowance, noting the terminal disclaimer over the ’676 Patent and allowing claims 1-6 for the same reasons set forth in the June 25, 2020, Final Rejection. EX1002, 274-278; EX1003, ¶49.

IV. POSITA

A person of ordinary skill in the art (“POSITA”) relevant to the ’059 Patent as of March 31, 2014 would have had at least: (1) a bachelor’s degree in electrical engineering, computer science, computer engineering, or equivalent coursework, with at least two years of work experience in video conferencing systems, networked multimedia communication systems, or remote conference system architectures; or (2) a master’s degree in electrical engineering, computer science, computer engineering, or equivalent coursework, with coursework or research focused on video conferencing systems, networked terminal management, real-time audio/video transmission, or client-server communication architectures. An individual with additional education could have less practical experience, and vice versa.

V. CLAIM CONSTRUCTION

Petitioner contends that no constructions are necessary for determining whether the prior art meets the limitations of the challenged claims.

VI. OVERVIEW OF CHALLENGE

Petitioner requests cancellation of claims 1-6 as set forth below:

Ground	Claims	Statutory Basis	Reference(s)
1A/1B	1-6	§102/103	Vander Mey
2A/2B	1-6	§102/103	Huang
3	1-6	§103	Vander Mey in view of Ichimura

The application that issued as the '059 Patent was filed on October 16, 2019, and is a continuation of U.S. Application No. 15/277,069 filed September 27, 2016, which is a continuation of International Application No. PCT/JP2015/060144 filed March 31, 2015, which claims priority to Japanese Patent Application No. 2014-071406 filed March 31, 2014. EX1001, Cover Page.

Petitioner's challenge is based on the following references, which are prior art under 35 U.S.C. §102 (pre-AIA). None of these references were considered or cited during prosecution of the '059 Patent.

Exhibit	Reference	Date(s)	Availability as Prior Art
EX1004	U.S. Patent No. 9,113,032 ("Vander Mey")	Filed Aug. 25, 2011; Issued Aug. 18, 2015	§§102(a), 102(e)
EX1005	U.S. Patent Application Publication No. 2010/0302346 ("Huang")	Filed May 27, 2009; Published Dec. 2, 2010	§§102(a), 102(b)
EX1006	U.S. Patent No. 6,573,926 ("Ichimura")	Filed Jun. 21, 1999; Issued Jun. 3, 2003	§§102(a), 102(b), 102(e)

VII. OVERVIEW OF THE PRIOR ART

A. Vander Mey

Vander Mey relates to selecting which participants to display during a video conference when multiple computing devices participate in a real-time video communication session. Vander Mey discloses a computing device that receives image data from multiple other conference devices, displays only selected participant video feeds, and may display an overlay containing conference information such as a participant list. EX1004, 4:25-65, 6:10-35, 17:17-25, Fig. 4.

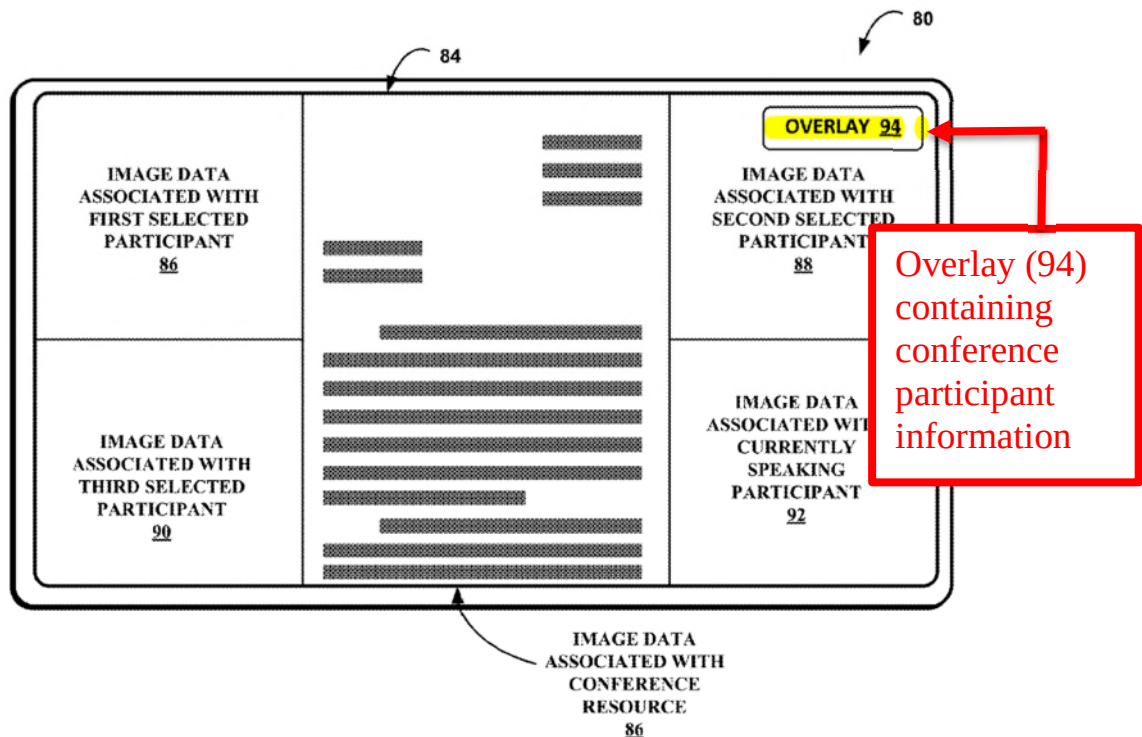


FIG. 4

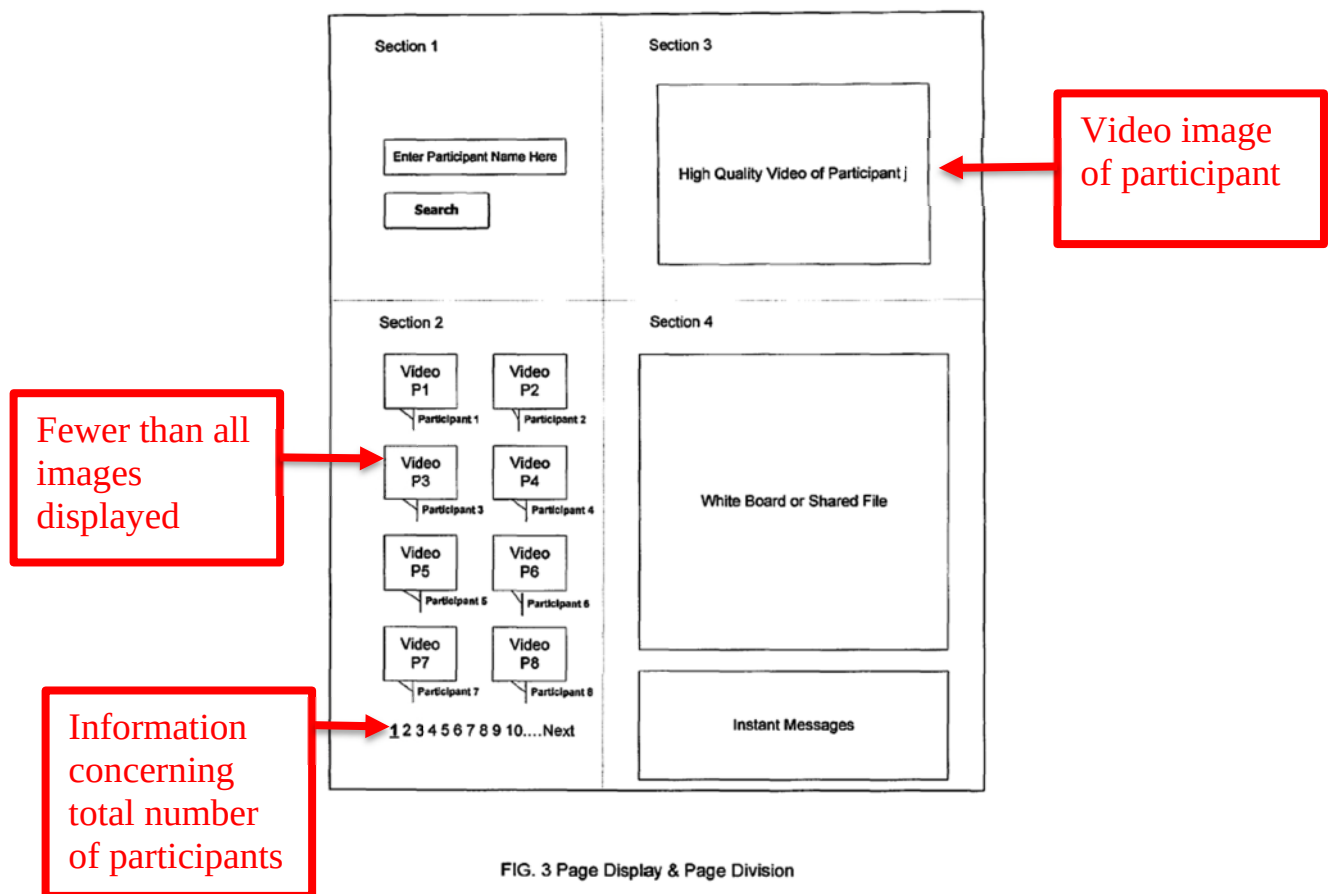
Vander Mey explains that it may be impractical to display every participant when the number of users is large, and its selection module therefore determines participation ratings and selects a subset of participants whose image data is displayed. EX1004, 1:25-35, 3:20-25, 10:1-15, 16:35-42. Vander Mey also expressly distinguishes the number of displayed image-data signals from the total conference population by teaching that the number of displayed signals may depend on properties such as “how many total participants the video conference has.” EX1004, 14:52-61.

As applied in Ground 1, these disclosures show that Vander Mey anticipates or renders obvious the challenged claims because it teaches a video conference terminal that displays image data from fewer than all participants while providing conference-participant information on the display.

B. Huang

Huang relates to processing and synchronizing large-scale video conferencing and document sharing through client computers and a conference server. Huang discloses a system in which clients generate high-quality and low-quality video streams, the server receives video streams from multiple clients, and each client receives only selected streams for display. EX1005, Abstract, ¶¶[0005], [0007]. Huang addresses large conferences by dividing the display across multiple screen pages, each containing video images for only a subset of participants, so that “only

video images of a much smaller number” of participants are streamed to a client at any given time. EX1005, ¶[0009]. Huang also discloses participant search and page navigation, including an example in which a 100-participant conference is allocated across multiple pages, each page displaying only a smaller group of participant videos with participant names shown below the video images. EX1005, ¶[0025], Fig. 3.



As applied in Ground 2, Huang independently discloses the claimed display-control arrangement because its client displays video images from a subset of

conference participants while its page-based interface, participant names, and search functionality provide information concerning the broader set of participants in the conference.

C. Ichimura

Ichimura relates to a conference system in which conference terminals exchange real-time data, such as cine image data and voice data, through a conference control device, while conference records are distributed efficiently through a separate broadcasting network. EX1006, Abstract, 3:55-4:30. The conference control device maintains conference control information that includes a participant number storage section and participant information storage sections, and it updates the participant number as terminals join the conference. EX1006, 5:1-50. Ichimura further discloses that each terminal includes an output device and conference means that provide a user interface displaying “the number and profiles of the participants currently attending the conference.” EX1006, 6:20-37.

As applied in Ground 3, Ichimura confirms that displaying a numerical participant count was a known conference-terminal interface feature, and a POSITA would have been motivated to add that express participant-number display to Vander Mey’s existing participant overlay because Vander Mey already tracks total participant count information and already displays conference-related information on the screen.

VIII. THE ASSERTED GROUNDS OF INVALIDITY

Ground 1 relies on Vander Mey as anticipating, or in the alternative rendering obvious, claims 1–6. Vander Mey discloses a computing device that participates in a video conference with a plurality of other computing devices, receives image data from those devices, and displays only a subset of participant video feeds. EX1004, 4:25-65, 6:10-35, 14:52-61; EX1003, ¶55. Vander Mey also displays a participant list overlay and tracks how many total participants the video conference has. EX1004, 14:55-61, 17:17-25; EX1003, ¶55.

Ground 2 relies on Huang as anticipating, or in the alternative rendering obvious, claims 1–6. Huang discloses a large-scale video conferencing system in which client computers participate in conferences with up to 100 participants, each client displays video feeds from only a subset of participants through a page-based display, and the page navigation interface, participant name lists, and search functionality convey information concerning the total number of participants. EX1005, ¶¶[0009], [0021], [0025]; EX1003, ¶56.

Ground 3 relies on Vander Mey in view of Ichimura. Ichimura expressly “displays the number and profiles of the participants currently attending the conference.” EX1006, 6:29-37; EX1003, ¶57. A POSITA would have been motivated to add Ichimura’s participant-number display to Vander Mey’s interface because Vander Mey already recognizes that the total number of participants helps

determine how many image data signals to display, and Ichimura confirms that displaying the number of current participants was a known and useful conference-terminal interface feature. EX1004, 14:55-61; EX1006, 6:29-37; EX1003, ¶¶55-57, 142-146.

A. Ground 1: Vander Mey Anticipates And/Or Renders Obvious Claims 1-6

Vander Mey anticipates every limitation of claims 1-6 of the '059 Patent. Vander Mey discloses a computing device (transmission terminal) with processors (processing circuitry) that perform a video conference with a plurality of other computing devices, display image data from a selected subset of conference participants on its display device, and displays an overlay with a participant list. The displayed video feeds are fewer than the total conference population, including in the example where display device 4 shows image data associated with two of six participants. EX1004, 6:15-7:20, 17:17-25, FIG. 1. Vander Mey's claims expressly recite a method of determining participation ratings, selecting participants, and displaying associated image data—disclosing both the apparatus claims (1–3) and their method counterparts (4–6). EX1004, 19:5-30, claims 1-26.

In the alternative, Vander Mey also renders claims 1-6 obvious. Vander Mey tracks “how many total participants the video conference has” and provides an overlay for conference-related information. EX1004, 14:55-61, 17:17-25. Simply

displaying that number in the existing overlay would have been an obvious, trivial modification requiring no more than routine skill. EX1003, ¶¶60-62.

1. Independent Claim Preambles [Claim 1]/[Claim 3]/[Claim 4]/[Claim 6]

- a) [1.pre]/[3.pre] “A transmission terminal performing a video conference with a plurality of transmission terminals, the transmission terminal comprising:”**

Vander Mey describes a “first computing device 2” that engages in a “real-time video communication” with five other computing devices 20-1 through 20-5 over a network. EX1004, 4:25-40; FIG. 1. Computing device 2 and computing devices 20-1 through 20-5 “have established a real-time video communication, referred to herein as a video conference.” EX1004, 4:60-65. Computing device 2 thus constitutes a “transmission terminal performing a video conference with a plurality of transmission terminals.” EX1003, ¶¶63-64.

Vander Mey’s computing device satisfies the claimed transmission terminal. Vander Mey discloses that computing device 2 may be “a desktop computer,” “a mobile phone,” “a laptop,” “a tablet device,” or other computing device. EX1004, 34:30-40. The ’059 Patent likewise discloses that its transmission terminal may be “an information processing terminal” such as “a PC (Personal Computer), a tablet-type terminal, a smartphone, a cell phone, a PDA.” EX1001, 4:65-5:5. These overlapping device examples confirm that Vander Mey’s computing device is a transmission terminal. EX1003, ¶¶65-66.

b) [4.pre]/[6.pre] “A method . . .”

Vander Mey expressly discloses performing a method implemented by a computing device engaged in a video conference with a plurality of other computing devices.

Vander Mey’s Own Claims Recite a Method. Vander Mey’s claim 1 expressly recites “[a] method, comprising: determining, at a computing device that includes one or more processors and that is associated with a user, a participation rating for each of a plurality of participants in a real-time visual communication session . . . selecting . . . two or more participants . . . and providing, for display, image data associated with the two or more selected participants on a display device of the computing device.” EX1004, 19:5-30. Vander Mey thus claims, in its own right, a method performed by a computing device during a video conference. A POSITA would have thus understood that Vander Mey teaches performing methods associated with its disclosure. EX1003, ¶¶67-68.

FIG. 3 Illustrates the Method. Vander Mey’s FIG. 3 is a flowchart illustrating “an example method 60 that may be performed by a computing device to determine which image data associated with two or more participants from a plurality of participants in a real-time communication session to display on the computing device.” EX1004, 9:62-10:1-7; FIG. 3. Method 60 includes three steps: determining participation ratings (step 62), selecting participants based on those

ratings (step 64), and providing image data associated with the selected participants for display (step 66). EX1004, 10:1-15; FIG. 3. These steps are performed by computing device 2—the same device that constitutes the “transmission terminal” discussed in the analysis of [Claim 1.pre] above. EX1003, ¶69.

The Method Is Implemented by Software Executed on Processors. Vander Mey teaches that computing device 2 includes “one or more processors 40” that execute “video conference application 8,” which in turn includes “selection module 6.” EX1004, ~~7:45-678:45-60~~, 9:50-65; FIG. 2. When processors 40 execute video conference application 8 and selection module 6, computing device 2 performs the functional operations of establishing a video conference, receiving image data from other participants, selecting which participants’ image data to display, and displaying the selected image data on display device 4. EX1004, 6:1-20, 7:~~5140-6740~~, 10:1-15. A POSITA would have understood that any processor-based system that performs functional operations through software execution necessarily performs the steps of a method. EX1003, ¶70.

The Method Is Performed During a Video Conference with a Plurality of Terminals. Vander Mey teaches that computing device 2 and computing devices 20-1 through 20-5 “have established a real-time video communication, referred to herein as a video conference.” EX1004, 4:60-65. The method described in FIG. 3 is performed during this video conference—the participation ratings are determined

based on conversation properties that arise *during* the conference (such as who is currently speaking), and the display of selected participants' image data occurs *during* the conference on the screen of computing device 2. EX1004, 7:10-40, 10:1-15. Computing device 2 thus implements the method while it is performing a video conference with the plurality of computing devices 20-1 through 20-5. EX1003, ¶71.

Vander Mey's Specification Confirms the Method Is Continuously Performed. Vander Mey teaches that “each participation rating for each of the plurality of participants may be updated throughout the video conference” and that “the selection process may also be performed regularly, intermittently, or continuously throughout the video conference.” EX1004, 156:35-442. This confirms that method 60 is not a one-time event but an ongoing process implemented by the transmission terminal throughout the video conference—precisely the scenario contemplated by claims 4 and 6. EX1003, ¶¶72-73.

2. [1.a]/[3.a]/[4.a]/[6.a] “processor processing circuitry configured to display on a screen of the transmission terminal, information concerning a total number of transmission terminals participating in the video conference,”

Vander Mey discloses this element expressly, or at a minimum inherently.

Processor processing circuitry: Computing device 2 includes “one or more processors 40” that execute video conference application 8 and selection module 6 to control the device's communication and display functions. EX1004, 7:50-678:45-

~~60~~; FIG. 2. Processors 40 “may be configured to implement functionality and/or process instructions for execution in computing device 2.” EX1004, ~~8:1-58:41-43~~.

A POSITA would have understood that processors 40 constitute the claimed “processor processing circuitry.” EX1003, ¶¶74-75.

Express Disclosure: Participant List Overlay. Vander Mey teaches that display device 84 “may further display an overlay 94” and that “[i]nformation that may be included in overlay 94 may include a list of participants.” EX1004, 17:19-25; FIG. 4. This participant list is displayed on the same screen as the selected participants’ video feeds, simultaneously with the video conference. EX1004, FIG. 4 (showing overlay 94 on display device 84 alongside four participants’ video feeds). EX1003, ¶76.

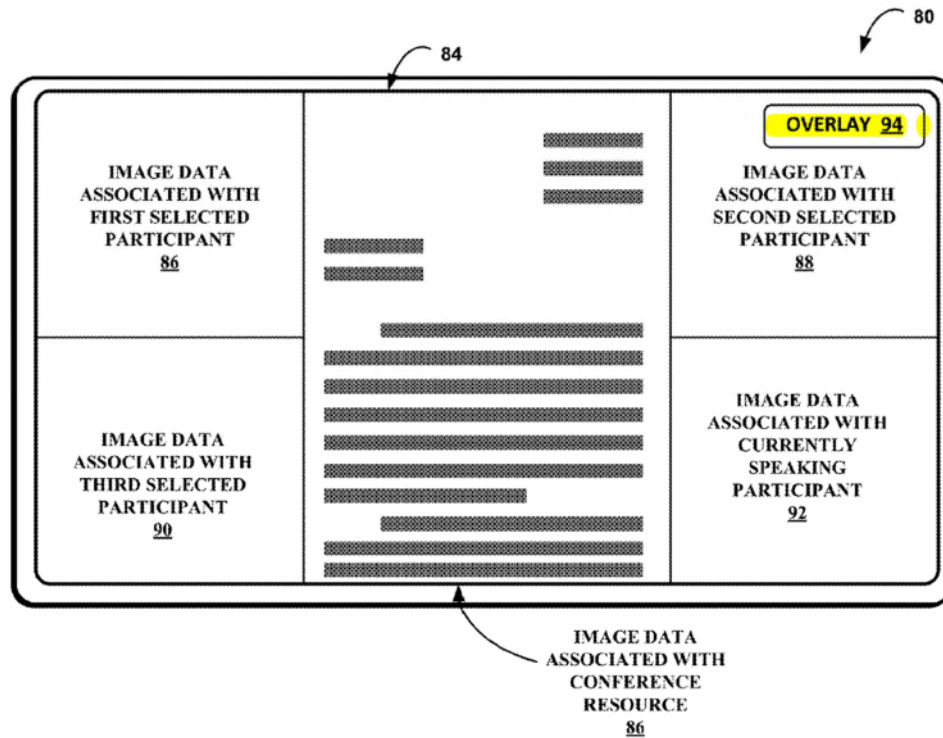


FIG. 4

A participant list conveys participant-count information because the user can determine total count of participants to the user. For example, a displayed roster of Alice, Bob, Charles, Dave, Eve, and Frank conveys a six participant conference. Similarly, Vander Mey’s participant list communicates the total number of participants to the user who views it in its overlay. EX1004, 17:19-25; EX1003, ¶77.

The claims are not limited to only displaying a discrete numeral in a dedicated counter. It requires “information *concerning* a total number”—that is, any information relating to the total number of participants. The word “concerning” is broad and relational. A participant list is one of the most informative ways to convey this data because it tells the user not only *how many* participants there are but

also *who* they are. Under the ordinary and customary meaning of the claim language, Vander Mey's participant list overlay satisfies this limitation. EX1003, ¶78.

Inherent Disclosure: System Knowledge and Display of Total Participant Count. Vander Mey further discloses that its system tracks the total number of conference participants. Vander Mey states that “N may be dynamically determined throughout the video conference based on properties of the video conference (for example, how many total participants the video conference has, how many active participants there are, etc.).” EX1004, 14:55-61. This passage establishes that the system maintains an internal count of “how many total participants the video conference has” and uses it to make display decisions. EX1003, ¶79.

A system that (1) knows the total participant count, (2) generates a list of all participants, and (3) displays that list on screen via an overlay necessarily displays “information concerning a total number of transmission terminals participating in the video conference.” The total number of transmission terminals participating in the video conference is inherent in the displayed list. EX1003, ¶80.

Alternative §103 Obviousness Rationale. To the extent it is argued that Vander Mey's participant list overlay does not expressly or inherently disclose “information concerning a total number,” displaying a participant count alongside video feeds during a conference would have been obvious to a POSITA in view of Vander Mey alone. Vander Mey's system already tracks “how many total

participants the video conference has” internally. EX1004, 14:55-61. Vander Mey already provides an overlay mechanism (overlay 94) for displaying conference-related information on screen. EX1004, 17:17-25. The only step required is to display the internally tracked total-participant count in the existing overlay—a trivial user interface modification requiring no architectural changes and no more than routine programming skill. A POSITA would have been motivated to add a numerical participant count to the overlay for the obvious reason that users of Vander Mey’s system—who can see only a subset of video feeds—would want to know at a glance the total size of the conference without having to count entries in a list. EX1003, ¶81. This is the predictable use of a known technique (displaying a count) in a known system (Vander Mey’s overlay) to yield a predictable result (informing the user of conference size). *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). EX1003, ¶¶81-82.

Routine Design Choice. A POSITA designing a video conferencing interface would have understood that displaying the number of current participants is a routine and useful design choice, especially where the interface displays fewer than all participant videos. Vander Mey already recognizes that the total number of participants affects how many video feeds should be displayed. EX1004, 14:55-61. A POSITA would have viewed the addition of such a participant count to Vander

Mey as a straightforward, predictable, and beneficial interface enhancement.

EX1003, ¶¶83-84.

3. [1.b]/[3.b]/[4.b]/[6.b] “and display, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other,”

Vander Mey expressly discloses this element. Vander Mey teaches that computing device 2 receives “image data 38” from the plurality of computing devices 20-1 through 20-5, and that “display device 4 of computing device 2 may display all or part of image data 38.” EX1004, 6:~~410~~-~~5915~~. Image data 38 “may be one or more real-time video feeds” provided by “each computing device 20-1 through 20-5 communicatively coupled to computing device 2.” EX1004, 5:5-15. The image data displayed on display device 4 constitutes “respective sets of image data transmitted by transmission terminals participating in the video conference to each other.” EX1003, ¶¶85-86.

FIG. 1 of Vander Mey (copied below) illustrates computing device 2 displaying “first image data 22 and second image data 24” on display device 4, where first image data 22 and second image data 24 are image data from two of the six conference participants. EX1004, 6:~~4925~~-~~7:235~~; FIG. 1.

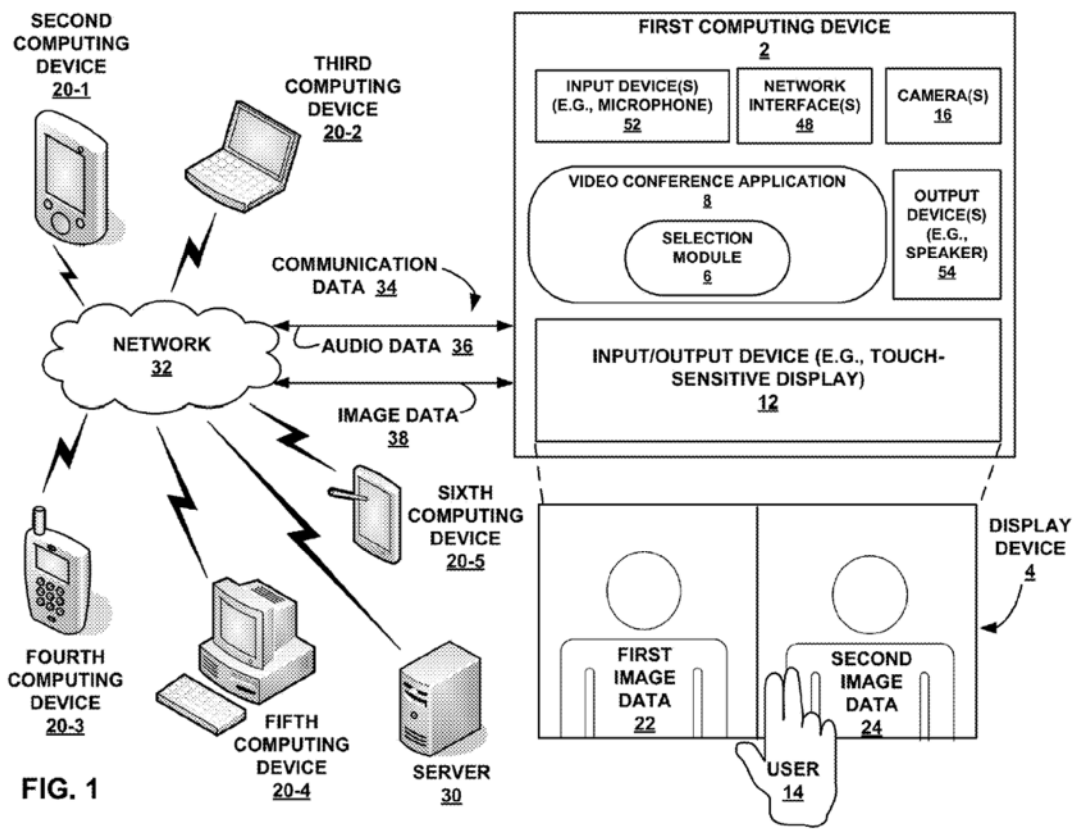


FIG. 4 (below) shows display device 84 displaying image data from four participants simultaneously—first selected participant 86, second selected participant 88, third selected participant 90, and currently speaking participant 92. EX1004, 16:41-55; FIG. 4.

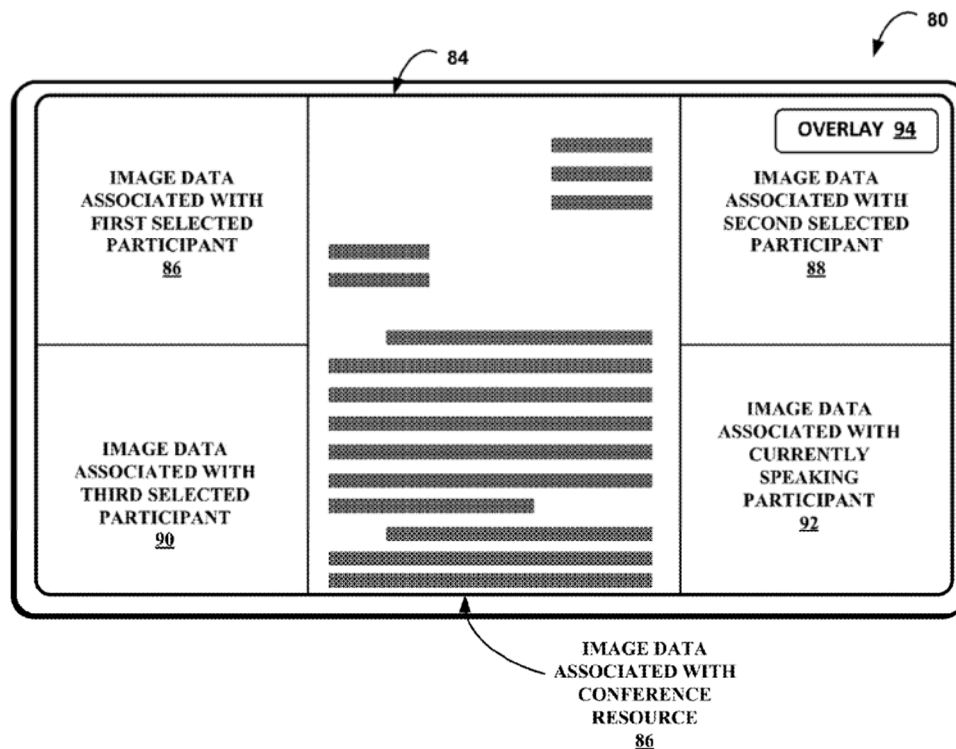


FIG. 4

In both examples, image data from participating terminals is displayed on the screen of the transmission terminal. EX1003, ¶¶87-88.

4. [1.c]/[4.c] “wherein a number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal is smaller than the total number of transmission terminals participating in the video conference.”

Vander Mey expressly discloses this element. Vander Mey teaches that computing device 2 participates in a six-participant video conference but “display device 4 may be **configured to display image data associated with two of the six**

participants.”¹ EX1004, 6:~~49~~15-7:20; FIG. 1. Two is smaller than six. This directly satisfies the claim requirement that “a number of the sets of image data . . . to display on the screen of the transmission terminal is smaller than the total number of transmission terminals participating in the video conference.” EX1003, ¶¶89-90.

Vander Mey’s entire disclosure is premised on this concept. The reference explains that “when the number of users or participants is relatively large, it may not be practical to display a video transmission from each participant on the computing device.” EX1004, 2:55-65. The stated purpose of selection module 6 is to choose a *subset* of participants for display from among all conference participants using participation ratings. EX1004, 1:25-35. Vander Mey further teaches that “[a] computing device may display N number of image data signals associated with participants, where N is an integer. For example, N for a desktop computer may be larger than N for a mobile phone.” EX1004, 6:56-64, 14:52-56. This confirms that the number of displayed video feeds (N) is a variable that is *smaller than* the total number of conference participants—which is the very scenario the claim recites. EX1003, ¶91.

Vander Mey makes this point even more explicitly by teaching that “N may be dynamically determined throughout the video conference based on properties of the video conference (for example, how many total participants the video conference

¹ All emphasis is added unless otherwise noted.

has, how many active participants there are, etc.).” EX1004, 14:56-61. This passage confirms that the system distinguishes between the total number of participants and the smaller number N that are displayed—and dynamically manages the relationship between the two. EX1003, ¶92.

FIG. 4 of Vander Mey further illustrates this configuration. Display device 84 shows image data from only four participants (first selected participant 86, second selected participant 88, third selected participant 90, and currently speaking participant 92) alongside a conference resource 86, while overlay 94 provides a “list of participants” which may include additional participants whose video is not displayed. EX1004, 16:~~47~~~~15~~-17:~~21~~~~0~~; FIG. 4. A POSITA viewing FIG. 4 would understand that the number of displayed video feeds (four) is smaller than the total number of conference participants (which includes participants not shown in the main display areas). EX1003, ¶¶93-94.

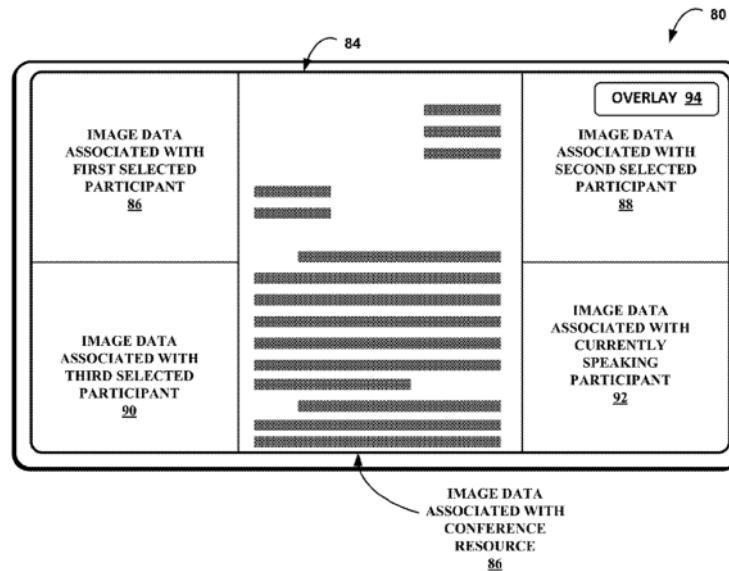


FIG. 4

- a) [3.c]/[6.c] “wherein the total number of transmission terminals participating in the video conference is greater than a number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal.”

Because elements [1.c]/[4.c] and [3.c]/[6.c] recite the identical factual condition—the displayed subset is smaller than the total conference population—using different but logically equivalent phrasing, Petitioner respectfully submits that no independent analysis is required for element [3.c]/[6.c] beyond what is set forth for element [1.c]/[4.c]. Any prior art disclosure that satisfies [1.c]/[4.c] necessarily and simultaneously satisfies [3.c]/[6.c], because one cannot be true without the other. If $A < B$, then $B > A$ —as a matter of mathematical certainty. EX1003, ¶¶95-96.

Accordingly, Vander Mey anticipates element [3.c]/[6.c], and, in the alternative, renders it obvious, for the same reasons set forth in the analysis of element [1.c]/[4.c] above. EX1003, ¶97.

5. [2]/[5] **“the processing circuitry is configured to display information concerning names or identification information of transmission terminals performing the video conference.”**

Vander Mey expressly discloses Claims 2/5.

The Participant List Overlay Displays Names or Identification Information. As discussed with respect to element [1.a]/[4.a], Vander Mey teaches that display device 84 “may further display an overlay 94” and that “[i]nformation that may be included in overlay 94 may include a list of participants.” EX1004, 17:19-25; FIG. 4. A “list of participants” necessarily comprises names or identification information of the conference participants—a list without identifying content would not be a “list of participants” at all. A POSITA would have understood that a displayed list of participants contains the names or other identification information by which each participant is distinguished from the others. EX1003, ¶¶98-99.

Participants Are Identified by Name Throughout Vander Mey. Vander Mey teaches that display device 84 “may further display an overlay 94,” and that “[i]nformation that may be included in overlay 94 may include a list of participants.” EX1004, 17:19-25; FIG. 4. Vander Mey further explains that the

system may detect an identifier associated with a participant and that such an identifier “may be a name, a username, a login name, a role the participant is playing in the video conference (such as mediator or presenter, etc.), or the like.” EX1004, 12:7-10. In view of these disclosures, a POSITA would have understood that Vander Mey’s participant list overlay identifies conference participants by names or other identifying information used by the system to distinguish one participant from another. This understanding is consistent with Vander Mey’s broader disclosure that participants are selected, displayed, and updated based on participant-specific information during an ongoing video conference. EX1003, ¶100.

Vander Mey’s Participation Ratings Are Tied to Identified Participants. Vander Mey teaches that “participation ratings may be determined individually for each participant” and that the system tracks conversation properties such as “whether user 14 is a friend of another participant,” “whether a participant has spoken the name of another participant,” and “a relationship between a participant associated with one or more of the other participants.” EX1004, 7:25-30, 11:~~4960~~-65, 12:45-55, 13:65-67. These properties are meaningful only if participants are identified by name or other identification information. EX1003, ¶101. A system that evaluates social relationships, detects spoken names, and tracks individual speaking histories necessarily maintains and can display identification information for each participant. EX1003, ¶¶101-102.

Accordingly, Claims 1-6 are anticipated or, in the alternative, obvious over Vander Mey.

B. Ground 2: Huang Anticipates And/Or Renders Obvious Claims 1-6

Huang anticipates every limitation of claims 1-6. Huang discloses a client computer (transmission terminal) with conference application software running on processing circuitry that participates in a multi-party video conference with a plurality of other client computers. The client displays video images from only a subset of conference participants through a page-based display system. EX1005, ¶¶[0009], [0021], [0025], [0027]; FIGS. 1, 3. The displayed video feeds on any given page are fewer than the total number of conference participants, which is the core of Huang's page-division technique. EX1005, ¶[0009]. Huang's own claims recite a method of providing video conferencing including displaying video streams on multiple screen pages, each containing video images of a subset of participants. EX1005, claims 1, 4-5, 7; EX1003, ¶103.

In the alternative, to the extent it is argued that any element is not expressly or inherently disclosed, Huang at minimum renders claims 1-6 obvious because the only arguable gap—whether Huang's page navigation and participant lists constitute “information concerning a total number”—is bridged by the common sense that a system displaying 10-12 numbered pages of 8-9 participants obviously communicates the approximate total conference size. Moreover, Huang discloses

that its server maintains a complete participant roster and provides search functionality across the entire conference population. Accordingly, adding an explicit numerical participant count to Huang's existing graphical interface would have been an obvious, trivial modification well within the level of skill of a POSITA. EX1003, ¶¶104-105.

1. Independent Claim Preambles [Claim 1]/[Claim 3]/[Claim 4]/[Claim 6]

a) [1.pre]/[3.pre] “A transmission terminal performing a video conference with a plurality of transmission terminals, the transmission terminal comprising:”

Huang describes “multiple client computers 110, 120, 130 and 140” that “remotely connect to a conferencing server 200 over a wide area network (WAN) 300 such as the Internet.” EX1005, ¶[0021]; FIG. 1. Each client computer 110–140 participates in a multi-party video conference with the other client computers by “constantly exchang[ing] signals and media streams” including video data, audio data, and text. EX1005, ¶[0021]. Each client computer therefore constitutes a “transmission terminal performing a video conference with a plurality of transmission terminals.” EX1003, ¶¶106-108.

b) [4.pre]/[6.pre] “A method . . .”

Huang expressly discloses performing a method implemented by a client computer engaged in a video conference with a plurality of other client computers.

Huang’s Own Claims Recite a Method. Huang’s claim 1 expressly recites “[a] method to provide video conferencing, comprising: a. generating at a client a high quality video stream and a low quality video stream; b. receiving at a server a plurality of high quality and low quality video streams from a plurality of clients; and c. sending from the server to each client one high quality video stream and a plurality of low quality video streams.” EX1005, claim 1. Dependent claims further recite method steps performed at the client, including “selecting at the client one participant’s high quality video stream” (claim 4), “displaying at the client the low quality video for the remaining participant(s)” (claim 5), and “displaying the video streams on multiple screen pages, each page contains video images of a sub-set of participants” (claim 7). EX1005, claims 4, 5, 7. Huang thus claims a method performed by a client computer during a video conference. A POSITA would have thus understood that Huang teaches performing methods associated with its disclosure. EX1003, ¶¶109-110.

The Client Executes Conferencing Software to Perform the Method. Huang teaches that each client computer includes “a conference application 501 which is the software that drives or controls the conferencing hardware such as webcam or headset.” EX1005, ¶[0030]; FIG. 5. The conference application 501 controls a signal channel 505 for exchanging conferencing control signals, a media channel 510 for exchanging media with the server, and a “video and

audio capturing and display module 515” for capturing and displaying video.

EX1005, ¶[0030]; FIG. 5. When a general-purpose computer executes conference application 501, it performs the functional operations of generating video streams, transmitting them to the server, receiving video streams from other participants, selecting which participant’s high quality video to display, rendering participant video in the page-based display layout, and responding to user interactions such as page navigation and participant search. EX1005, ¶¶[0021]–[0026]; FIGS. 1–4. A POSITA would have understood that any processor-based system that performs these functional operations through software execution necessarily performs the steps of a method. EX1003, ¶111.

The Method Is Performed During a Video Conference with a Plurality of Terminals. Huang teaches that “multiple client computers 110, 120, 130 and 140 remotely connect to a conferencing server 200 over a wide area network (WAN) 300 such as the Internet,” and that “[d]uring a conference, the clients 110–140 and server 200 constantly exchange signals and media streams.” EX1005, ¶[0021]; FIG. 1. Each client thus participates in a video conference with a plurality of other client computers. The method steps described above—generating streams, selecting a participant for high-quality display, rendering pages of participant video, navigating between pages, searching for participants—are all performed *during* the video conference by the client computer. EX1005, ¶¶[0021]–[0026]. Huang’s client

computer therefore implements the method while it is performing a video conference with the plurality of other client computers. EX1003, ¶112.

The Method Is Continuously Performed Throughout the Conference. Huang teaches that a user can dynamically change which participant is displayed in high quality during the conference: “Each client can change the participant to view predominantly, accordingly, the server will stream the high quality video image of the selected participant, and stream low quality video images of the rest participants to the client.” EX1005, ¶[0012]. The user can also “flip through the pages one by one to display the participant or group of participants of his interest” and “search the desired participant by name of person, name of group, team ID etc, and then enter the result page that contains the video image of the desire participant.” EX1005, ¶¶[0009], [0025]. These ongoing display operations—selecting participants, changing pages, performing searches—are performed repeatedly throughout the conference by the client computer executing its conference application. This confirms that Huang’s method is not a one-time initialization step but an ongoing process implemented by the client terminal throughout the video conference. EX1003, ¶¶113-114.

2. **[1.a]/[3.a]/[4.a]/[6.a] “processor processing circuitry configured to display on a screen of the transmission terminal, information concerning a total number of transmission terminals participating in the video conference,”**

Huang discloses this element expressly, or at a minimum as obvious.

Processor Processing Circuitry: Huang discloses that “[p]referably the invention is implemented in a computer program executed on a programmable computer having a **processor**” EX1005, ¶[0036]. Huang further teaches that each client computer “can be either a specialty conferencing device, or a general purpose computer loaded with specialty conferencing software that can exchange text, audio, and video with the server 200.” EX1005, ¶[0021]. Huang further discloses that each client includes a “conference application 501 which is the software that drives or controls the conferencing hardware such as webcam or headset” and a “video and audio capturing and display module 515” that captures and displays video. EX1005, ¶¶[0029]–[0030]; FIG. 5. A general-purpose computer loaded with conferencing software necessarily includes a processor that executes the software—the conference application 501 could not operate without processing circuitry. A POSITA would have understood that Huang’s client computer, executing conference application 501, constitutes a “transmission terminal” comprising “processor processing circuitry.” EX1003, ¶¶115-116.

Express Disclosure: Page Count and Participant Roster. Huang teaches a page-based display system in which the total conference population is divided across multiple pages: “if the conference has 100 participants and each page can display 9, then the system allocates them into 12 pages.” EX1005, ¶[0025]. The page navigation interface—shown in FIG. 3 as “1 2 3 4 5 6 7 8 9 10 . . . Next”—displays

the total number of available pages to the user. EX1005, FIG. 3. A user who sees page indicators and knows that each page displays 8 participants can ascertain the approximate total number of conference participants. The page count itself is “information concerning a total number of transmission terminals participating in the video conference” because it mathematically conveys the conference scale—12 pages of 8 participants each communicates a conference of approximately 100 participants. EX1003, ¶117.

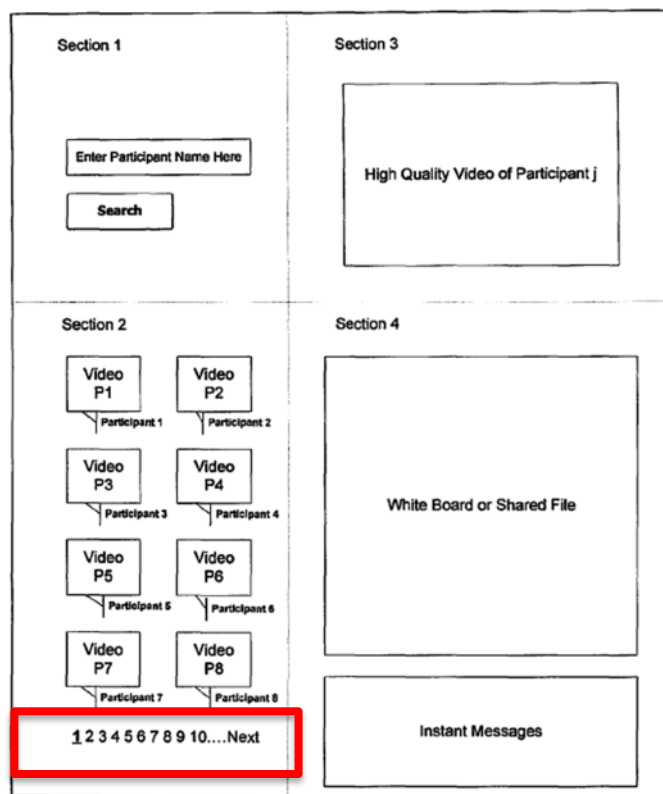


FIG. 3 Page Display & Page Division

Express Disclosure: Participant Name List and Search. Huang further teaches that “Section 2 is a list of participants and their respective video images of smaller sizes and lower quality. Below each video image is the name of the participant.” EX1005, ¶[0025]; FIG. 3. Additionally, Huang teaches a search function: “section 1 in FIG. 3 is a search box, a participant can enter the name of other participants to display the video image on section 3.” EX1005, ¶[0025]. Huang also teaches that “the client can search the desired participant by name of person, name of group, team ID etc.” EX1005, ¶[0009]. The displayed participant list on each page, combined with the page navigation showing the total number of pages, conveys information concerning the total number of conference participants. EX1003, ¶118.

Alternative §103 Obviousness Rationale. Even if it is argued that Huang’s page navigation and participant lists do not expressly satisfy this limitation, displaying the total number of conference participants alongside the video feeds would have been obvious to a POSITA in view of Huang alone. Huang’s server already tracks the participant roster and allocates it across numbered pages. EX1005, ¶¶[0025]–[0026]. Huang’s client already displays a graphical user interface with multiple sections, including a participant list (Section 2), a search box (Section 1), and page navigation controls (FIG. 3). EX1005, ¶[0025]; FIG. 3. Adding a simple numerical indicator (e.g., “100 participants”) to any section of this existing interface

would have been the trivial design choice of displaying a number the system already knows. A POSITA would have been motivated to add such an indicator to help users of large-scale conferences understand the conference size at a glance without having to count pages or entries. EX1003, ¶119. This is the predictable use of a known technique (displaying a count) in a known system (Huang’s conference GUI) to yield a predictable result (informing the user of conference size). *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007). EX1003, ¶119.

Routine Design Choice. A POSITA designing a video conferencing interface would have understood that displaying the number of current participants is a routine and useful design choice, especially where the interface displays fewer than all participant videos. Adding a participant count indicator to an existing conference interface is a straightforward software modification that a POSITA could implement in a matter of hours. The data is already available in the system (Huang’s server maintains the participant roster), and displaying a number in a graphical user interface requires only basic programming skills. A POSITA would have been confident that this modification would work as expected. EX1003, ¶¶120-122.

3. **[1.b]/[3.b]/[4.b]/[6.b] “and display, on the screen of the transmission terminal, respective sets of image data transmitted by transmission terminals participating in the video conference to each other,”**

Huang expressly discloses this element. Huang teaches that each client computer displays video images of conference participants on its screen. Huang’s

FIG. 3 shows a display layout in which “Section 3 is a larger video image of a participant who is the host of the conference by system default setting, or is the participant chosen to be displayed on a page” and “Section 2 is a list of participants and their respective video images of smaller sizes and lower quality.” EX1005, ¶[0025]; FIG. 3. Each page of the display contains “one large sized video image of one selected participant, and a few (in this example eight) small sized video images of corresponding participants.” EX1005, ¶[0025]. EX1003, ¶¶123-124.

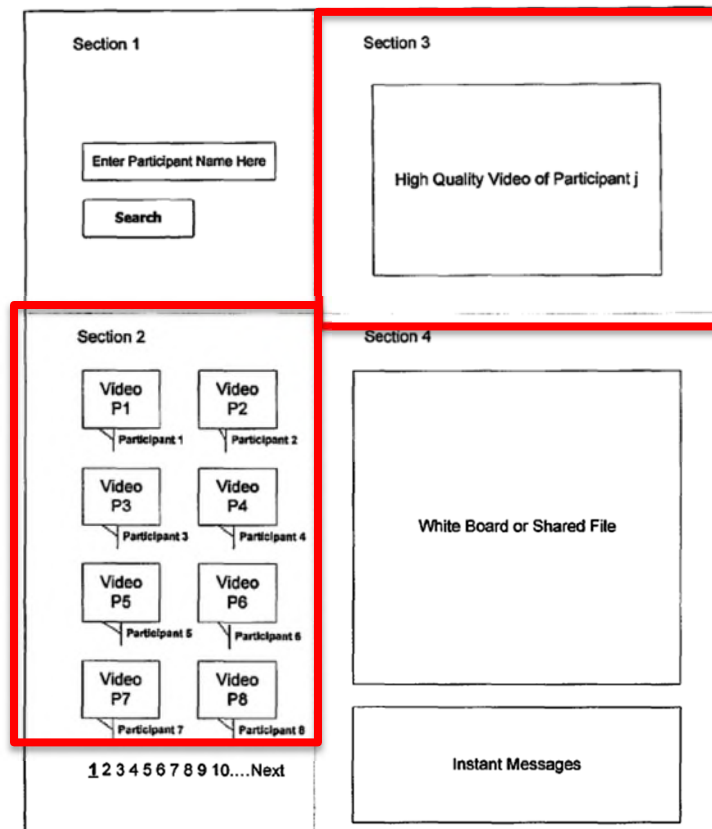


FIG. 3 Page Display & Page Division

The video images displayed on the client computer's screen are transmitted by other conference participants. Huang teaches that each client computer "generate[s] and send[s] its own video images to other clients directly or over a conference server, and . . . receive[s] video images from other participant clients." EX1005, ¶[0002]. Specifically, each client sends two video streams (one high quality and one low quality) to the server, and each client receives one high quality video stream and multiple low quality video streams from the server. EX1005, ¶¶[0004], [0024]. The displayed video images on Huang's client screen therefore constitute "respective sets of image data transmitted by transmission terminals participating in the video conference to each other." EX1003, ¶¶125-126.

4. **[1.c]/[3.c]/[4.c]/[6.c] "wherein a number of the sets of image data, transmitted by transmission terminals participating in the video conference to each other, to display on the screen of the transmission terminal is smaller than the total number of transmission terminals participating in the video conference."**

Huang expressly discloses this element. The entirety of Huang's page-division technique is built on the premise that a client displays video from only a *subset* of conference participants at any given time while the total conference population is larger. Huang states this principle in unmistakable terms: "in any given time, only video images of a much smaller number of participant [sic] will be streamed to a client." EX1005, ¶[0009]. EX1003, ¶¶127-128.

Huang provides a concrete numerical example. In a 100-participant conference with 10 participants displayed per page, “the system divides 100 participants into 10 pages, each page with only 10 participants, thus the client only receive [sic] video streams of 10 participants at any time.” EX1005, ¶[0027]. Ten is smaller than one hundred. This directly satisfies the claim requirement that “a number of the sets of image data . . . to display on the screen of the transmission terminal is smaller than the total number of transmission terminals participating in the video conference.” EX1003, ¶129.

Huang emphasizes this point further: “The video streams can be accessed through multiple screen pages, each page contains video images of a sub-set of participants.” EX1005, ¶[0007]. The system “streams only video streams for the sub-set of participants” currently displayed. EX1005, ¶[0007]. The explicit use of “sub-set” confirms that the number of displayed video feeds is less than the total number of conference participants. EX1003, ¶130.

Huang explains that this architecture is necessary precisely *because* the total number of participants exceeds what a single client can display or receive. In a 100-participant conference without page division, “each client will send 1 stream of his own video and receive 99 stream of videos of the rest participants,” which would require “download at 19 Mbps which is not feasible for most of the high speed internet access.” EX1005, ¶[0027]. The page-division technique solves this problem

by ensuring the client receives only the streams for the displayed subset—for example, 10 streams rather than 99. EX1005, ¶[0028]. A POSITA reading Huang would understand without any doubt that the number of displayed image data sets is smaller than the total number of conference participants, because that is the very problem Huang set out to solve. EX1003, ¶¶131-132.

5. [2]/[5] **“the processing circuitry is configured to display information concerning names or identification information of transmission terminals performing the video conference.”**

Huang expressly discloses Claims 2/5.

Participant Names Are Displayed Below Each Video Image. Huang teaches that the client’s display includes “Section 2 [which] is a list of participants and their respective video images of smaller sizes and lower quality. Below each video image is the name of the participant.” EX1005, ¶[0025]; FIG. 3. This is an express disclosure of displaying “information concerning names . . . of transmission terminals performing the video conference.” The participant names are displayed on the screen of the client computer alongside the video images during the conference. EX1003, ¶¶133-135.

C. Ground 3: Vander Mey in View of Ichimura Renders Obvious Claims 1-6

As explained above in Grounds 1 and 2, Vander Mey (which discloses a participant list overlay) and Huang (which discloses page navigation conveying approximate count), anticipate or render obvious all the limitations of claims 1-6.

However, to the extent Patent Owner argues that limitation [1.a]/[3.a]/[4.a]/[6.a] requires displaying a numerical quantity, Ichimura expressly discloses this. Ichimura discloses displaying the number of participants currently attending the conference. EX1006, 6:33-35. The combination of Vander Mey with Ichimura is simple—it merely requires adding one data point (a number) from Ichimura to an existing display location (the overlay) in Vander Mey. EX1003, ¶136.

With Ichimura supplying the express participant-number display of limitation [1.a]/[3.a]/[4.a]/[6.a], Vander Mey (as explained above in Ground 1) discloses the remaining limitations of claims 1/3/4/6. EX1003, ¶137. Vander Mey discloses a computing device with processors performing a video conference with a plurality of other computing devices. EX1004, 4:25-65, ~~78:5145-670~~; EX1003, ¶137. Vander Mey discloses displaying respective sets of image data transmitted by participating terminals, including first image data and second image data from selected participants. EX1004, 6:10-35; EX1003, ¶137. Vander Mey also discloses that the number of displayed image data sets is smaller than the total number of conference participants, because display device 4 may display image data associated with two of six participants. EX1004, 6:~~4915-7:20~~; EX1003, ¶137.

Accordingly, Vander Mey in view of Ichimura renders claims 1-6 obvious. EX1003, ¶138. Vander Mey provides the claimed video conference terminal and subset video display, while Ichimura provides the express teaching of displaying the

number of participants currently attending the conference. EX1004, 6:15-35, 14:55-61, 17:17-25; EX1006, 6:29-37; EX1003, ¶¶136-138. The combination is the predictable use of a known conference-interface feature to improve Vander Mey's already-existing conference overlay by showing the user the total number of participants while fewer than all participant video feeds are displayed. EX1003, ¶138.

1. Motivation to Combine

A POSITA would have been motivated to incorporate Ichimura's participant-number display into Vander Mey's video conference interface for several independently sufficient reasons. EX1003, ¶¶139-140.

Same Field of Endeavor. Vander Mey and Ichimura are in the same field of endeavor because both are directed to networked conferencing systems in which terminals exchange conference information and present conference-related information to users through terminal displays. Vander Mey discloses a video conference system in which computing device 2 participates in a real-time video communication with multiple other computing devices and displays selected participants' image data. EX1004, 4:25-65, 6:10-35; EX1003, ¶141. Ichimura discloses a conference system in which conference terminals exchange real-time data such as cine image data and voice data through a conference control device and display that information on terminal monitors. EX1006, 4:10-30; EX1003,

¶141. Both references address the same basic problem of how to present useful conference information to users of networked conference terminals. EX1003, ¶141.

Ichimura Solves a User-Awareness Problem in Vander Mey. Vander Mey's system displays only a subset of the image data received from conference participants. EX1004, 6:15-20, 14:52-61; EX1003, ¶142. In Vander Mey's example, display device 4 displays image data associated with only two of six participants. EX1004, 6:15-~~20~~²⁹; EX1003, ¶142. Because the user sees fewer video feeds than the total number of participants, the user benefits from a separate indication of the total number of people currently attending the conference. EX1003, ¶142. Ichimura provides exactly that feature: the terminal-side conference means controls the output device to provide a user interface that "displays the number and profiles of the participants currently attending the conference." EX1006, 6:29-37; EX1003, ¶142. A POSITA would have recognized that adding Ichimura's participant-number display to Vander Mey would allow the user to immediately understand the total conference size even when Vander Mey displays only a subset of participant video feeds. EX1003, ¶142.

Vander Mey Already Tracks the Information Ichimura Displays. Vander Mey expressly teaches that the number N of displayed image data signals may be dynamically determined based on conference properties, including "how many total participants the video conference has" and "how many active participants there are."

EX1004, 14:55-61; EX1003, ¶143. Thus, Vander Mey's system already maintains or obtains the total participant count internally for display-selection purposes. EX1003, ¶143. Ichimura teaches the straightforward user-interface step of displaying that same type of participant-count information to the user. EX1006, 6:29-37, 5:60-65; EX1003, ¶143. A POSITA would have found it obvious to expose Vander Mey's already-known participant count in the user interface, just as Ichimura does. EX1003, ¶143.

Predictable Use of a Known Interface Feature. The combination is the predictable use of a known conference-interface feature to improve a similar video conferencing system. Vander Mey already provides an overlay 94 that may display conference-related information, including a participant list and interactive options available to a user during the video conference. EX1004, 17:17-25; EX1003, ¶144. Ichimura teaches displaying the number and profiles of current conference participants in a terminal user interface. EX1006, 6:29-37; EX1003, ¶144. Incorporating Ichimura's participant number into Vander Mey's overlay or participant-list interface would require only routine graphical user interface programming and would yield the predictable result of informing the user of the total number of current conference participants. EX1003, ¶144.

Reasonable Expectation of Success. A POSITA would have had a reasonable expectation of success in combining the references. Both systems use

processor-controlled terminals that display conference information to users.

EX1004, 7:50-67, ~~8:45-60~~, 17:17-25; EX1006, 6:20-37; EX1003, ¶145. Adding a numeric participant count to Vander Mey's existing overlay would not alter Vander Mey's video-selection process, participation-rating algorithm, or image-display functionality. EX1003, ¶145. It would simply display information the system already tracks in a form that Ichimura confirms was known and useful in conference user interfaces. EX1003, ¶145.

Routine Design Choice. A POSITA designing a video conferencing interface would have understood that displaying the number of current participants is a routine and useful design choice, especially where the interface displays fewer than all participant videos. EX1003, ¶146. Vander Mey already recognizes that the total number of participants affects how many video feeds should be displayed. EX1004, 14:55-61; EX1003, ¶146. Ichimura confirms that conference terminals conventionally displayed the number and profiles of participants currently attending a conference. EX1006, 6:29-37; EX1003, ¶146. A POSITA would have viewed the addition of such a participant count to Vander Mey as a straightforward, predictable, and beneficial interface enhancement. EX1003, ¶146.

2. [1.a]/[3.a]/[4.a]/[6.a] “processor processing circuitry configured to display on a screen of the transmission terminal, information

concerning a total number of transmission terminals participating in the video conference,”

The combination of Vander Mey and Ichimura renders this element obvious. All other limitation of claims 1-6 are disclosed by Vander Mey as demonstrated above in Ground 1.

Vander Mey teaches that display device 84 “may further display an overlay 94” and that “[i]nformation that may be included in overlay 94 may include a list of participants.” EX1004, 17:19-25; FIG. 4. As explained in Ground 1 above, this participant list expressly and inherently conveys the total number of conference participants because a user viewing a complete list of names immediately knows the total count. Vander Mey further confirms that its system internally tracks “how many total participants the video conference has” and uses that count to make display decisions. EX1004, 14:55-61; EX1003, ¶¶147-148.

To the extent it is argued that Vander Mey’s participant list does not expressly, inherently, or obviously satisfy this limitation, **Ichimura expressly discloses this element.** EX1006, 6:29-37; EX1003, ¶149. Ichimura’s conference terminal includes an output device 23 that provides a user interface to the user. EX1006, 6:29-31, 5:60-65; EX1003, ¶149. That user interface “**displays the number and profiles of the participants currently attending the conference.**” EX1006, 6:335-37; EX1003, ¶149. This is a direct disclosure of displaying information concerning the

total number of participants currently attending the conference under any interpretation. EX1003, ¶149.

Ichimura also discloses that the conference system tracks the participant number as participants join. EX1006, 5:15-45; EX1003, ¶150. The conference control information storage section includes a participant number storage section and participant information storage sections corresponding to the current participant number. EX1006, 5:15-25; EX1003, ¶150. When a participation request is received, Ichimura's conference control means generates a participant identifier, stores the identifier, and adds one to the participant number storage section. EX1006, 5:15-45; EX1003, ¶150. A POSITA would have understood that this stored participant number is the same information displayed to the user as the number of participants currently attending the conference. EX1003, ¶150.

In the combination, Vander Mey's computing device 2 would display Ichimura's participant count in the overlay 94 that Vander Mey already provides for presenting conference-related information. EX1004, 17:17-25. The overlay already displays "a list of participants" and "interactive options available to a user during a video conference," making it the natural location for a numerical participant count. EX1004, 17:1-5; 17:5-18:1. Adding a single numeral to this existing overlay requires no architectural changes to Vander Mey's system. EX1003, ¶151.

A POSITA would have been motivated to make this modification because Vander Mey's system already tracks the total participant count internally but does not expressly display it as a numeral. EX1004, 14:55-61. Ichimura demonstrates that displaying this count as a dedicated numerical indicator was a known and implemented solution to the user-awareness problem inherent in any system that displays video from fewer participants than are actually in the conference. EX1006, 6:29-37. The combination is the predictable use of a known technique (Ichimura's numerical participant count) to improve a similar device (Vander Mey's conference terminal) in the same way (informing the user of total conference size). *KSR*, 550 U.S. at 417. EX1003, ¶¶152-153.

IX. CONCLUSION

Petitioner respectfully requests institution of IPR and cancellation of all claims of the '059 Patent.

X. MANDATORY NOTICES PURSUANT TO 37 C.F.R. §42.8

A. Real Parties-In-Interest under 37 C.F.R. §42.8(b)(1).

The real party-in-interest is Zoom Communications, Inc. No other parties exercised or could have exercised control over this Petition. No other parties funded or directed the filing of this Petition.

B. Related Matters Under 37 C.F.R. §42.8(b)(2).

The '059 Patent is asserted in *Ricoh Company, Ltd. v. Zoom Communications, Inc. f/k/a Zoom Video Communications, Inc.*, No. 25-2095 (JCG) (D. Del.).

C. Lead and Back-up Counsel under 37 C.F.R. §42.8(b)(3).

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D. Service Information under 37 C.F.R. §42.8(b)(4).

Please direct all correspondence to lead counsel at the address identified above. Petitioner consents to electronic service on counsel of record.

XI. GROUNDS FOR STANDING

Petitioner certifies that the '059 Patent is available for *inter partes* review and that Petitioner is not barred or estopped from requesting an *inter partes* review of the '059 Patent. 37 C.F.R. §42.104(a).

XII. PAYMENT OF FEES

A fee of \$51,875 charged to Deposit Account 130019 was paid with the filing this petition. 37 C.F.R. §§42.15(a), 42.103. Should any further fees be required by the present Petition, the Board is hereby authorized to charge the above-referenced Deposit Account.

XIII. STATEMENT OF PRECISE RELIEF REQUESTED

Petitioner requests IPR and cancellation of claims 1-6 because they are unpatentable under 35 U.S.C. §§102 and 103 based on the foregoing grounds.

Date: July 24, 2026

Respectfully submitted,

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Patent No. 10,909,059
Petition for *Inter Partes* Review

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§42.6 and 42.105, I hereby certify that on July 24, 2026, a copy of the attached PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,909,059, together with all exhibits, and all other papers filed therewith, including a Power of Attorney on behalf of Petitioners, was served via Priority Mail Express on the attorneys of record for the patent owner at the following address:

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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.11

Pursuant 37 C.F.R. § 42.11, the undersigned certifies that this PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,909,059, and accompanying evidence are not being presented for an improper purpose and that all legal contentions, allegations, and denials are warranted and have evidentiary support.

July 24, 2026

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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 10,909,059 complies with the type-volume limitation of 37 C.F.R. § 42.24(a). The word count application of the word processing program used to prepare this paper states that the paper contains 10,569 words, excluding the parts of the paper exempted by 37 C.F.R. §§ 42.24(a)(1).

Date: July 24, 2026

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