UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC and YOUTUBE, LLC

Petitioner

v.

VOXER, INC. and VOXER IP LLC

(record) Patent Owner

IPR2026-00423
Patent No. 11,777,883

DECLARATION OF DR. HENRY HOUH

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GOOGLE 1002

~~**PETITION FOR INTER PARTES REVIEW**~~
~~**UNDER 35 U.S.C. §§ 311-319 AND 37 C.F.R. § 42.100 ET SEQ.**~~

TABLE OF CONTENTS

TABLE OF CONTENTS 2

I. ENGAGEMENT AND COMPENSATION 4

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II. SUMMARY OF OPINIONS 6

III. QUALIFICATIONS 6

IV. MY UNDERSTANDING OF THE RELEVANT LAW 13

A. Claim Construction 13

B. Anticipation 14

C. Obviousness 15

D. Written Description and Priority 18

V. TECHNICAL INTRODUCTION 19

A. The '883 Patent Disclosure 19

B. Overview of Prosecution History 21

VI. RELEVANT TIMEFRAME FOR DETERMINING OBVIOUSNESS 27

VII. LEVEL OF ORDINARY SKILL IN THE ART 28

VIII. CLAIM CONSTRUCTION 29

IX. PRIORITY DATE FOR THE CHALLENGED CLAIMS 29

A. The E2E Limitation 30

B. The Priority Date of the '883 Patent is no Earlier than August 8, 2016. 32

C. The Priority Applications Filed Prior to August 8, 2016 Lack Support for the E2E Limitation 33

X. DETAILED EXPLANATION OF THE REASONS FOR UNPATENTABILITY 36

Ground 1. Claims 1-65 are Obvious over Katis and Abbazia 36

A. Overview of the Combination 36

1. Overview of Abbazia 37

2. The Combination..... 39

B. Rationale (Motivation) Supporting Obviousness 41

C. Reasonable Expectation of Success 46

D. Analogous Art 46

E. Graham Factors 47

F. Claim Mapping 47

XI. SECONDARY CONSIDERATIONS 90

XII. OATH 91

1. I, Henry Houh, hereby declare as follows:

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I. ENGAGEMENT AND COMPENSATION

I have been retained by Google LLC ("Petitioner") as an expert in the *inter partes* review proceeding described above. I have been asked to provide my technical review, analysis, insights, and opinions regarding the references that Petitioner's counsel have provided to me that form the basis for the grounds of unpatentability set forth in the Petition for *inter partes* review of U.S. Patent No. 11,777,883 ("the '883 patent").

~~I. MANDATORY NOTICES ..... 1~~
~~A. Real Parties-in-Interest ..... 1~~
~~B. Notice of Related Matters ..... 1~~
~~C. Notice of Lead and Backup Counsel ..... 3~~
~~D. Service Information ..... 3~~
~~II. CERTIFICATION OF GROUNDS FOR STANDING ..... 3~~
~~III. GROUNDS OF UNPATENTABILITY ..... 4~~
~~IV. INTRODUCTION ..... 4~~
~~A. Summary of the '883 Patent ..... 4~~
~~B. Overview of Prosecution History ..... 6~~
~~V. LEVEL OF ORDINARY SKILL IN THE ART ..... 11~~
~~VI. CLAIM CONSTRUCTION ..... 12~~
~~VII. PRIORITY DATE FOR THE CHALLENGED CLAIMS ..... 12~~
~~A. The E2E Limitation ..... 13~~

B. The Priority Date of the '883 Patent is no Earlier than August 8, 2016 15

1. Legal Standards 15

2. The Priority Applications Filed Prior to August 8, 2016 Lack Support for the E2E Limitation 17

VIII. DETAILED EXPLANATION OF THE REASONS FOR UNPATENTABILITY 19

Ground 1. Claims 1-65 are Obvious over Katis and Abbazia 19

A. Overview of the Combination 20

1. Overview of Abbazia 20

2. The Combination 22

B. Rationale (Motivation) Supporting Obviousness 25

C. Reasonable Expectation of Success 28

D. Analogous Art 29

E. Claim Mapping 29

CLAIM 1 30

CLAIM 2 42

~~CLAIM 3 ..... 42~~
~~CLAIM 4 ..... 43~~
~~CLAIM 5 ..... 44~~
~~CLAIM 6 ..... 44~~
~~CLAIM 7 ..... 45~~
~~CLAIM 8 ..... 45~~
~~CLAIM 9 ..... 46~~
~~CLAIM 10 ..... 47~~
~~CLAIM 11 ..... 47~~
~~CLAIM 12 ..... 48~~
~~CLAIM 13 ..... 49~~
~~CLAIM 14 ..... 50~~
~~CLAIM 15 ..... 50~~
~~CLAIM 16 ..... 51~~
~~CLAIM 17 ..... 52~~
~~CLAIM 18 ..... 52~~
~~CLAIM 19 ..... 52~~
~~CLAIM 20 ..... 53~~
~~CLAIM 21 ..... 53~~
~~CLAIM 22 ..... 54~~

~~CLAIM 23 ..... 55~~
~~CLAIM 24 ..... 56~~
~~CLAIM 25 ..... 56~~
~~CLAIM 26 ..... 57~~
~~CLAIM 27 ..... 58~~
~~CLAIM 28 ..... 58~~
~~CLAIM 29 ..... 59~~
~~CLAIM 30 ..... 60~~
~~CLAIM 31 ..... 60~~
~~CLAIM 32 ..... 61~~
~~CLAIM 33 ..... 61~~
~~CLAIM 34 ..... 62~~
~~CLAIM 35 ..... 62~~
~~CLAIM 36 ..... 64~~
~~CLAIM 37 ..... 64~~
~~CLAIM 38 ..... 64~~
~~CLAIM 39 ..... 64~~

Google/Voxer Ex. 2022, p.9 of 145
Google, Inc. v. Voxer, Inc., et. al.
IPR2026-00423

~~CLAIM 40 ..... 64~~
~~CLAIM 41 ..... 64~~
~~CLAIM 42 ..... 64~~
~~CLAIM 43 ..... 64~~
~~CLAIM 44 ..... 65~~
~~CLAIM 45 ..... 65~~
~~CLAIM 46 ..... 65~~
~~CLAIM 47 ..... 65~~
~~CLAIM 48 ..... 65~~
~~CLAIM 49 ..... 65~~
~~CLAIM 50 ..... 67~~
~~CLAIM 51 ..... 67~~
~~CLAIM 52 ..... 67~~
~~CLAIM 53 ..... 67~~
~~CLAIM 54 ..... 68~~
~~CLAIM 55 ..... 68~~
~~CLAIM 56 ..... 68~~
~~CLAIM 57 ..... 68~~
~~CLAIM 58 ..... 68~~
~~CLAIM 59 ..... 70~~

~~CLAIM 60 ..... 70~~
~~CLAIM 61 ..... 70~~
~~CLAIM 62 ..... 70~~
~~CLAIM 63 ..... 70~~
~~CLAIM 64 ..... 70~~
~~CLAIM 65 ..... 70~~
~~IX. SECONDARY CONSIDERATIONS ..... 70~~
~~X. CONCLUSION ..... 71~~
~~CLAIM LISTING APPENDIX ..... 73~~

~~**TABLE OF EXHIBITS**~~

2. For this service, my billing rate is my standard hourly consulting fee and I am reimbursed for actual expenses. My compensation in no way depends on the outcome of this matter.

3. This declaration sets forth my analyses and opinions based on the materials I have considered thus far and the bases for my opinions. My opinions are also based on my education and experience. I understand that this declaration will be used in the above mentioned inter partes review. In forming my opinions, I have considered the following Exhibits:

Exhibit No.	Description
1001	U.S. Patent No. 11,777,883 B2 ("**'883 patent**").
~~1002~~	~~Declaration of Dr. Henry Houh.~~
~~1003~~	~~C.V. of Dr. Henry Houh.~~
1004	U.S. Patent Appl. Pub. No. US 2009/0003558 A1 ("**Katis**").
1005	U.S. Pat. No. 7,756,033 ("**Abbazia**").
1006	App. Ser. No. 14/799,528 (Filed July 14, 2015) ("'**528 Specification**").
1007	File History of U.S. Application No. 17/889,108.

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1008	File History of U.S. Application No. 12/037,256.
1009	File History of U.S. Application No. 15/584,224.
1010	Provisional Application No. 60/937,552.
1011	Provisional Application No. 60/999,619.
1012	List of Applications in Voxer Patent Family.
1013	Proof of Service, D.I. 6, *Voxer, Inc. v. Google, LLC, et al.*, Civ. Action No. 1:25-cv-00873 (D. Del.).
1014	*Not submitted.*
1015	File History of U.S. Application No. 14/799,528.
1016	Redline of '528 Application as Compared to '883 Patent.
1017	App. Ser. No. 10/836,284 (Filed May 3, 2004).
1018	App. Ser. No. 12/028,400 (Filed Feb. 8, 2008).

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1019	App. Ser. No. 12/037,256 (Filed Feb. 28, 2008).
1020	App. Ser. No. 13/555,034 (Filed July 20, 2012).
1021	App. Ser. No. 14/198,043 (Filed Mar. 5, 2014).
1022	S. Deering, "RFC1112: Host Extensions for IP Multicasting," *Internet Engineering Task Force (IETF)* (August 1989).
1023	P. Lewis, "Peering Out a 'Real Time' Window," *New York Times* (Feb. 8, 1995).
1024	"IP Multicast Explained," *Metaswitch Networks* (copyright 2004-2009).
1025	*Facebook, Inc. v. Voxer IP LLC*, IPR2021-00113, Paper 13 (Patent Owner's Preliminary Response).

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~~Petitioner respectfully requests *inter partes* review of claims 1-65 of U.S.~~

4. I note that I rely on a several publications and non-patent literature materials in this declaration. In my opinion, these documents were published on the respective dates noted in each of the publications. In my opinion, the journals and other venues in which these materials were published are reputable and these materials are the type of materials that experts in the industries and fields of study relating to the methods of the challenged patent would reasonably rely on.

II. SUMMARY OF OPINIONS

5. It is my opinion that:

Despite~~Patent No. 11,777,883 ("the '883 patent").~~

~~**I. MANDATORY NOTICES**~~

~~**A. Real Parties-in-Interest**~~

~~The real parties-in-interest for this petition are Google LLC[1] and YouTube, LLC (collectively, "Petitioner"). YouTube, LLC is a subsidiary of Google LLC.~~

~~[1] Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.~~

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~~B. Notice of Related Matters~~

~~Petitioner is aware of the following matters that may affect, or be affected by, a decision in this proceeding.~~

~~The '883 patent has been asserted in two litigations, both of which are pending: *Voxer, Inc. v. Google, LLC, et al.*, Civ. Action No. 1:25-cv-00873 (D. Del.) ("the Google Litigation"), filed July 14, 2025, and *Voxer, Inc. v. Amazon.com, Inc.*, Civ. Action No. 1:25-cv-00872 (D. Del.) ("the Amazon Litigation"), filed July 14, 2025. All defendants have filed motions to transfer venue and to dismiss under FRCP 12(b)(6). The Court has not yet ruled on these motions, and no parties have served infringement or invalidity contentions; however, fact discovery is underway. The Markman hearing is scheduled for April 8, 2027, a jury trial in the Amazon Litigation is scheduled for November 27, 2028, and a jury trial in the Google Litigation is scheduled for February 5, 2029.~~

~~In addition, Petitioner is concurrently requesting *inter partes* review of two other patents that are related to the '883 patent: USP 11,146,516 (in IPR202600421) and USP 11,658,929 (in IPR2026-00422). Both of these patents are also at issue in the Google and Amazon Litigations.~~

~~To Petitioner's knowledge, none of the three challenged patents (i.e., the '929, '516, and '883 patents) have been at issue in any other proceedings.~~

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~~There were, however, prior proceedings involving the two other patents at issue in the Google and Amazon Litigations: USP 10,142,270 and USP 10,511,557. These two patents are related to the '883 patent and were at issue in proceedings involving Meta Platforms that began before the filing of the '516, '883, and '929 patents. Specifically, the '270 and '557 patents were at issue in *Voxer, Inc. v. Meta Platforms, Inc. f/k/a Facebook, Inc.*, Civ. Action No. 1:20-cv-00655 (W.D. Tex.) ("the Meta Litigation"), filed January 7, 2020. In September 2022, a jury found infringement and awarded damages; however, the Court ultimately vacated the jury verdicts and dismissed the case with prejudice pursuant to the parties' joint motion.~~

~~In addition, Meta filed IPRs challenging the '270 patent (IPR2021-00115) and the '557 patent (IPR2021-00112 and IPR2021-00113), which were all denied on the merits on May 7, 2021. Also, on May 18, 2023, Meta filed requests for *ex parte* reexamination of the '270 patent (App. No. 90/019,212) and the '557 patent (App. No. 90/019,211), each of which ultimately resulted in a reexamination certificate confirming the patentability of the challenged claims and adding new claims.~~

~~C. Notice of Lead and Backup Counsel~~

~~Lead Counsel: Matthew A. Smith (Reg. No. 49,003)~~
~~smith@smithbaluch.com~~
~~(202) 669-6207~~

~~Backup Counsel: Elizabeth Laughton (Reg. No. 70,484)~~
~~laughton@smithbaluch.com~~

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~~(703) 585-8839~~

~~Juliet Mitchell Dirba (Reg. No. 53,334)~~
~~dirba@smithbaluch.com~~
~~(512) 909-4153~~

~~D. Service Information~~

~~Petitioner consents to electronic service by email on lead and backup counsel at the email addresses listed above.~~

~~Post and hand delivery: SMITH BALUCH LLP~~
~~77 Newbury Street~~
~~3rd Floor~~
~~Boston, MA 02116~~

~~II. CERTIFICATION OF GROUNDS FOR STANDING~~

~~Petitioner certifies that the '883 patent is available for *inter partes* review, and that Petitioner is not barred or estopped from requesting an *inter partes* review on the grounds identified in the petition. This petition is timely filed within one year of the date of service of Patent Owner's complaint. EX1013.~~

~~III. GROUNDS OF UNPATENTABILITY~~

~~Petitioner requests cancellation of claims 1-65 of the '883 patent based on the following grounds:~~

~~Ground~~	~~Claim(s) Challenged~~	~~35 U.S.C. §~~	~~Reference(s)~~
~~1~~	~~1-65~~	~~103~~	~~Katis, Abbazia~~

- ~~As explained below (*infra* §VII, beginning on p.12), despite~~ claiming the benefit of an earlier priority date, the challenged claims of the '883 patent

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are not entitled to a priority date before August 8, 2016. ~~As a result, each of the relied upon references is prior art under 35 U.S.C. §102(a)(1). Katis was published on January 1, 2009, and Abbazia issued on July 13, 2010. Abbazia was not cited during the prosecution of any application leading to the '883 patent, and Katis, as an application in the priority chain, was not considered to be prior art.~~

- **Ground 1:** Claims 1–65 are obvious over Katis and Abbazia

III. QUALIFICATIONS

6. I hold a Ph.D. in electrical engineering and computer science from the Massachusetts Institute of Technology ("MIT"), awarded in 1998. I also hold a Master's Degree in electrical engineering and computer science from MIT, awarded in 1991, and two Bachelor's degrees (the first in electrical engineering and computer science and the second in physics) also from MIT, awarded in 1989 and 1990, respectively.

7. I have approximately 30 years of work experience related to topics in software development, networking, Internet communications, Web development, mobile device applications, and Internet advertising. I am currently a technical consultant specializing in Social Networking, Web 2.0, Web Site Development, Data

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Google/Voxer Ex. 2022, p.19 of 145
Google, Inc. v. Voxer, Inc., et. al.
IPR2026-00423

Networking, Optical Networking, Telecommunications, Media Streaming and Voice over IP.

8. In graduate school, I joined the Advanced Network Architecture ("ANA") group at the Laboratory for Computer Science ("LCS") at MIT, then headed by Prof. Tennenhouse and senior research scientist David Clark. Dr. Clark is generally considered to be one of the fathers of the Internet Protocol, having acted as chief protocol architect for the development of the Internet. Later, when Prof. Tennenhouse formed his own research group, the Telemedia Network Systems ("TNS") group, I joined the TNS group as a research assistant.

9. As part of my doctoral research at MIT from 1991-1998, I worked as a research assistant in the Telemedia Network Systems (TNS) group at the Laboratory for Computer Science. The TNS group built a high speed gigabit network and applications which ran over the network, such as remote video capture, processing and display on computer terminals. I set up the group's web server around late 1993, which at the time was one of the first several hundred web servers in existence. The graduate students, including myself, were responsible for designing, installing, and maintaining our group's network and computer infrastructure, including configuring any network equipment used in the group, including bridges and routers. I also performed the same role later in my own startup businesses.

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10. The TNS group built a high-speed gigabit network and applications which ran over the network, such as remote video capture, processing, and display on computer terminals. I designed the core networking hardware and software, including the high-speed data links and the device drivers for the network interface cards.

11. TNS's research activities focused on high-speed networking and the types of applications that require increased network bandwidth and computing power. One of the applications I investigated was live streaming video, and realtime processing of such video. My work was focused on the transport, switching, and routing of data (including video and audio streams), and the integration of TNS's network into the computing environment, including the protocols, IP/ATM integration, operating system software and device drivers. TNS created a computing environment where it was possible to stream audio/video live, and also created software processing modules to further process video to perform advanced functions such as green screening, scene change detection, motion detection, compression, video blending and video overlay, among many other features – all in real-time while displaying the processed video live. We also created multiparty video conferencing applications, and installed a multicast router as part of the MBONE, and used the

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MBONE to participate in meetings held by the Internet Engineering Task Force ("IETF"), the body that develops standards for the Internet. My Ph.D. thesis work focused on studying the routing resources required to route streams of video through the network, proposing several alternative labeling strategies at ingress points of a network to speed up network routing, especially for popular applications such as web traffic and longer lived streams such as audio and video. These labeling strategies I analyzed for my thesis is the same type of strategy used in MPLS today.

12. During the early part of my graduate studies, a time when there were perhaps a hundred or so web servers in existence, I set up a web server on one of our lab computers, and created content rich web pages for my research group and my research activities. Eventually, I, together with others I was working with, added live video demonstrations to TNS's web site. TNS's web site was one of the first several hundred web servers to exist, and the first to offer live video demonstrations initiated from the web site to a user's remote computer. I helped to build the web pages that initiated these video sessions via a web interface. I started and maintained the "Commercial Sites Index," the first listing of all the companies on the web. I later sold this list to OpenMarket, then a leader in web servers and eCommerce servers. I also started a company to build web sites and sell targeted online advertisements.

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13. Former Vice-President Al Gore visited our group in 1996 and received a demonstration of – and remotely drove – a radio-controlled toy car with a wireless video camera mounted on it; the video was encoded by TNS-designed hardware, streamed over the TNS-designed network and displayed using TNS-designed software.

14. I authored or co-authored at least twelve papers and conference presentations on my group's research at TNS. I also co-edited TNS's final report on its gigabit networking research effort. Some of my papers about web site development were presented at the first World-Wide Web conference held in 1994 at CERN in Geneva, Switzerland. CERN is the birthplace of the Web, and the conference was chaired by Tim Berners-Lee, the inventor of the World-Wide Web. When Tim Berners-Lee formed the World Wide Web Consortium at the MIT LCS in order to manage the progression of web protocols and standards, I assisted him in obtaining the consortium's domain names and setting up the consortium's web server.

15. From 1997 to 1999, I was a Senior Scientist and Engineer at NBX Corporation, a start-up that made business telephone systems for streaming packetized audio over data networks instead of using traditional telephone lines. NBX was later acquired by 3Com Corporation, and the phone system I worked on

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at NBX was widely used by numerous businesses. As part of my work at NBX, I designed the core audio reconstruction algorithms for the telephones, as well as the packet transmission algorithms. Our system also utilized multicast to deliver musicon-hold content to all the phones as well as for audio paging, which could activate the phones with a live audio message. I also designed and validated the core packet transport protocol used by the phone system. I also designed the method of utilizing network priority methods in our phone system. I also configured routers in our development and testing infrastructure, and set up tunnels through the Internet that we used to connect our network-based phones at trade shows around the country to our headquarters network.

16. From 2003-2004, I also was the architect for a next-generation web testing platform developed by Empirix, known as e-Test Suite. e-Test Suite is now owned by Oracle Corporation. e-Test provided functional and load testing for web sites. e-Test emulated a user's interaction with a web site and provided web developers with a method of creating various scripts and providing both functional testing (*i.e.*, did the web site provide the correct response) and load testing (*i.e.*, could the web site handle 5000 users simultaneously). As part of this project, I co-wrote a javascript interpreter for e-Test so that it could understand the javascript code present on advanced web sites.

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17. I worked at BBN Technologies from 2004 to 2009. BBN Technologies, formerly known as Bolt, Beranek and Newman, was a pioneer of the Internet and a long-established leader in speech recognition and natural language processing. BBN received the first contract to build components of a packet switched network as part of the ARPANET, a U.S. Department of Defense effort funded through the Advanced Projects Research Agency ("ARPA"). While this effort preceded my time at BBN by many years, BBN continued to maintain a strong presence in network research and development, including in wireless networking, device discovery, and protocols for a "body area network."

18. In 2006, as part of my role at BBN Technologies, I helped found PodZinger Inc., now known as RAMP Inc. PodZinger utilized BBN's speech recognition algorithms to search through the spoken words inside audio and video. After managing the creation of the initial prototype system, PodZinger built out a full web-based streaming audio and video search solution when I was the Vice President of Operations and Technology there. The web site had a full load- balanced back end that provided search and indexing solutions for our hosted multimedia (audio and video) content. Our PodZinger system processed videos in order to perform automatic speech recognition on the spoken contents of the video, after which we produced a word transcript we used in a search index for all our processed

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videos. All of the words in the transcript were individually tagged to frame locations within the video, so that selecting a word in the transcript caused the video to jump to the location within the video at which the word was spoken.

19. I also worked on commercializing a service offered by BBN to monitor call centers and provide analytical data on each call. The business became known as AVOKE Analytics and provided call center analytics for large organizations such as Dell and the Centers for Medicare and Medicaid Services ("CMMS").

20. I am familiar with patents and have numerous provisional and nonprovisional patent applications on which I am an inventor. These patent applications deal with various areas of technology including, but not limited to: utilizing network processors, network and packet delivery systems, tagging media content, dynamic presentation of advertising and other content using enhanced metadata, methods for web site testing, and organizing and managing files that are transmitted over a network.

21. I have worked on numerous legal cases that involved video streaming, including those that involve commercial television content providers that use multicast to deliver video content to numerous subscriber end points efficiently.

22. My qualifications and publications are set forth more fully in my curriculum vitae, attached as Ex-1003.

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IV. MY UNDERSTANDING OF THE RELEVANT LAW

A. Claim Construction

23. I understand that a claim term in an *inter partes* review is to be interpreted according to standards applied by district courts. First, the language of the claims themselves is of primary importance in the effort to determine precisely what it is that is patented. The terms used in a claim are generally given the ordinary and customary meaning that the terms would have to a person of ordinary skill in the art in question at the time of the alleged invention, unless the term is expressly defined in the patent. The person of ordinary skill in the art reads the claim in the context of the entire patent, including the specification. Next to the language of the claims, the specification is the single best source for interpreting the claim terms. The claims may also be interpreted using the record of correspondence between the patent applicant and the Patent Office, and also with reference to other sources of evidence that can help to define the meaning of terms to a person of ordinary skill in the relevant time frame. I define the relevant time frame in §VI, below.

B. Anticipation

24. I understand that a claim in an issued patent can be invalid if it is anticipated. In this case, "anticipation" means that there is a single prior art reference that discloses every element of the claim, arranged in the way required by the claim.

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25. I understand that an anticipating prior art reference must disclose each of the claim elements expressly or inherently. I understand that "inherent" disclosure means that the claim element, although not expressly described by the prior art reference, must necessarily be present based on the disclosure. I understand that a mere probability that the element is present is not sufficient to qualify as "inherent disclosure".

C. Obviousness

26. I understand that a claim in an issued patent can be invalid if it is obvious. Unlike anticipation, obviousness does not require that every element of the claim be in a single prior art reference. Instead, it is possible for claim elements to be described in different prior art references, so long as there is motivation or sufficient reasoning to combine the references.

27. I understand that a claim is invalid for obviousness if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which said subject matter pertains.

28. I understand, therefore, that when evaluating obviousness, one must consider obviousness of the claim "as a whole". This consideration must be from

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the perspective of the person of ordinary skill in the relevant art, and that such perspective must be considered as of the effective filing date of the claimed invention.

29. The level of ordinary skill in the art is discussed in §VII, below.

30. The relevant time frame for determining obviousness is discussed in §VI, below.

31. I understand that in considering the obviousness of a claim, one must consider four things. These include the scope and content of the prior art, the level of ordinary skill in the art at the relevant time, the differences between the prior art and the claim, and any "secondary considerations". I understand that these four things were specified by the U.S. Supreme Court in a case called *Graham v. John Deere*, and are therefore called the "*Graham* factors".

32. I understand that "secondary considerations" include real-world evidence that can tend to make a conclusion of obviousness either more probable or less probable. For example, the commercial success of a product embodying a claim of the patent could provide evidence tending to show that the claimed invention is not obvious. In order to understand the strength of the evidence, one would want to know whether the commercial success is traceable to a certain aspect of the claim not disclosed in a single prior art reference (i.e., whether there is a causal "nexus" to the claim language). One would also want to know how the market reacted to

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disclosure of the invention, and whether commercial success might be traceable to things other than innovation, for example the market power of the seller, an advertising campaign, or the existence of a complex system having many features beyond the claims that might be desirable to a consumer. One would also want to know how the product compared to similar products not embodying the claim. I understand that commercial success evidence should be reasonably commensurate with the scope of the claim, but that it is not necessary for a commercial product to embody the full scope of the claim.

33. Other kinds of secondary considerations are possible. For example, evidence that the relevant field had a long-established, unsolved problem or need that was later provided by the claimed invention could be indicative of nonobviousness. Evidence that others had tried, but failed to make an aspect of the claim might indicate that the art lacked the requisite skill to do so. Evidence of copying of the patent owner's products before the patent was published might also indicate that its approach to solving a particular problem was not obvious. Evidence that the art recognized the value of products embodying a claim, for example, by praising the named inventors' work, might tend to show that the claim was nonobvious.

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34. I further understand that prior art references can be combined where there is an express or implied rationale to do so. Such a rationale might include an expected advantage to be obtained, or might be implied under the circumstances. For example, a claim is likely obvious if design needs or market pressures existing in the prior art make it natural for one or more known components to be combined, where each component continues to function in the expected manner when combined (i.e., when there are no unpredictable results). A claim is also likely invalid where it is the combination of a known base system with a known technique that can be applied to the base system without an unpredictable result. In these cases, the combination must be within the capabilities of a person of ordinary skill in the art.

35. I understand that when considering obviousness, one must not refer to teachings in the specification of the patent itself. One can, however, refer to portions of the specification admitted to be prior art, including the "Background" section. Furthermore, a lack of discussion in the patent specification concerning how to implement a disclosed technique can support an inference that the ability to implement the technique was within the ordinary skill in the prior art.

D. Written Description and Priority

36. I understand that a patent claim needs to be described in the application for a patent that was filed with the United States Patent and Trademark Office. I

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Google/Voxer Ex. 2022, p.31 of 145
Google, Inc. v. Voxer, Inc., et. al.
IPR2026-00423

understand to "describe" a claim, the patent application needs to provide sufficient written description to reasonably convey to those skilled in the art that the inventor had 'possession' of the claimed subject matter as of the filing date. This involves an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art. Based on that inquiry, the specification must describe an invention understandable to that skilled artisan and show that the inventor actually invented the invention claimed. I further understand that while a patent specification can support a claim even if it does not need to use exactly the same words as the claim, this does not extend into the realm of "obviousness". That is, a patent specification that *merely* renders a claim obvious does not provide written description support for that claim.

37. I understand that for a negative claim limitation, the written description requirement cannot be met through simple disregard of the presence or absence of a limitation. I understand that the written description requirement *may* be satisfied if a PHOSITA would understand the specification to: (1) describe a reason to exclude the relevant element, e.g. by expressly listing the disadvantages of using that element or distinguishing among the element and alternatives to it, or (2) inherently disclose the negative limitation such that it would always be understood by skilled artisans as being necessarily excluded.

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38. I understand that a patent application is entitled to the benefit of the filing date of an earlier filed application to which it claims priority only if the disclosure of the earlier application provides support for the claims of the later application. I understand that originally-filed claims may be relied upon for support.

V. TECHNICAL INTRODUCTION

A. ~~Summary of the~~The '883 Patent Disclosure

39. I have reviewed the '883 patent. The '883 patent describes a "telecommunication and multimedia management method and apparatus" that allows users to engage in conversations by exchanging messages that include voice and/or other media. EX1001, 1:42-49, 4:25-37. Specifically, "[u]sers are empowered to conduct communications in either: (i) a near-synchronous or 'live' conversation, providing a user experience similar to a standard full duplex phone call; or (ii) in a series of back and forth time-delayed transmissions (i.e., time-shifted mode)." *E.g.*, EX1001, 4:38-54. "[U]sers engaged in a conversation can seamlessly transition from the live mode to the time-shifted mode and back again." *E.g.*, EX1001, 4:38-40. According to the '883 patent, "[t]his [is a] new form of communication" called "Voxing." EX1001, 4:52-54~~; EX1002, ¶39~~.

40. The '883 patent provides details of a Voxing system. Of note, a "Device" is the "physical device that runs the Client application," where "Client" refers to "the user application in the communication system, which includes a user interface, persistent data storage, and 'Voxing' functionality." EX1001, 8:5, 7:~~60-~~

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~~62~~6062. "Devices 13 communicate with one another over a communication services network 14, including one or more Servers 16." EX1001, 12:19-23. "Servers are responsible for [A] routing Messages sent back and forth between Users over the network and [B] the persistent storage and archiving of Media payloads." EX1001, 8:13-15; *see also id.* at 23:58-64. Client 12 includes store and stream module 24, which "persistently stores all Media … originating using a Device 13 or received over the network 18 from other Device 13 [sic] and/or users." EX1001, 19:18-21. Application 78 running on server 16 includes store and stream module 84, which also stores received messages and transmits the message to the next "hop" along the path to the intended recipient. EX1001, 22:66-23:8, 23:58-24:1. By virtue of these store and stream modules, a user can leave a message for another party even when the sender and/or recipient is unavailable: "the Message [will be] queued for transmission as soon as network connectivity becomes available, resulting in a timeshifted delivery." *E.g.*, EX1001, 19:21-30~~; EX1002, ¶40.~~.

41. In operation, Client 12_1 creates media, stores the media payloads, and "transmits the packets to the receiving Client 12_2 over the network 18." EX1001, 28:41-48. End-to-end encryption is provided between clients 12. EX1001, 12:5813:3. "Each Server 16 along the path between the sending Client 12_1 and the

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receiving Client 12_2 stores the transmitted payloads … and transmits the Vox packets to the next hop." EX1001, 28:48-51. After receiving the message, Client 12_2 stores the payloads, renders the payload information, and sends an acknowledgement to the sender. EX1001, 28:51-58, 22:26-29~~, EX1002, ¶41~~.

B. ~~—~~Overview of Prosecution History

42. ~~The~~I understand that the '883 patent is a relatively recent patent in an extensive family which claims ultimate priority to two provisional applications filed on June 28, 2007 and October 19, 2007. EX1001, code (63). A graphic illustrating

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the immediate patent family to which the '883 patent belongs is provided below with the '883 patent highlighted in green.[2]

Google/Voxer Ex. 2022, p.36 of 145
Google, Inc. v. Voxer, Inc., et. al.
IPR2026-00423

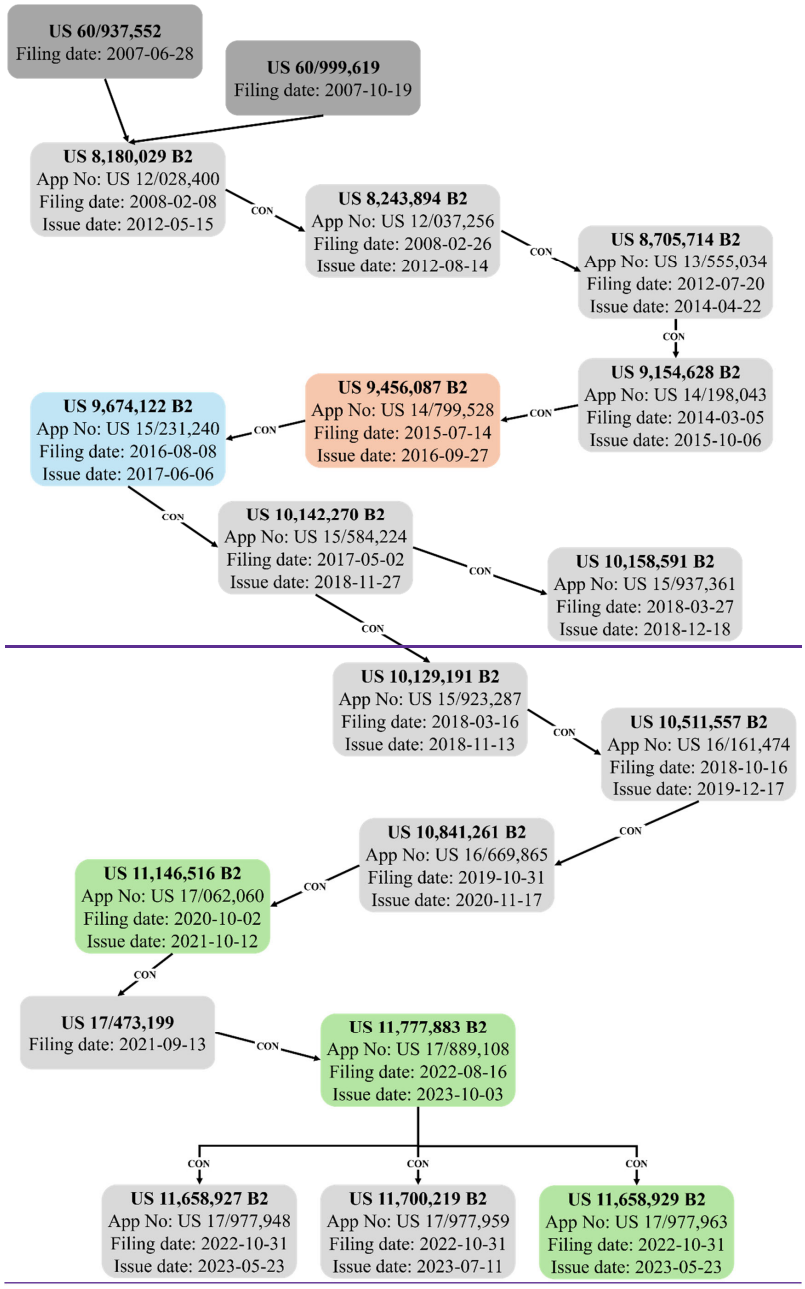
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[2] The other two patents for which Petitioner is concurrently requesting *inter partes* review are also highlighted in green.

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Google/Voxer Ex. 2022, p.37 of 145
Google, Inc. v. Voxer, Inc., et. al.
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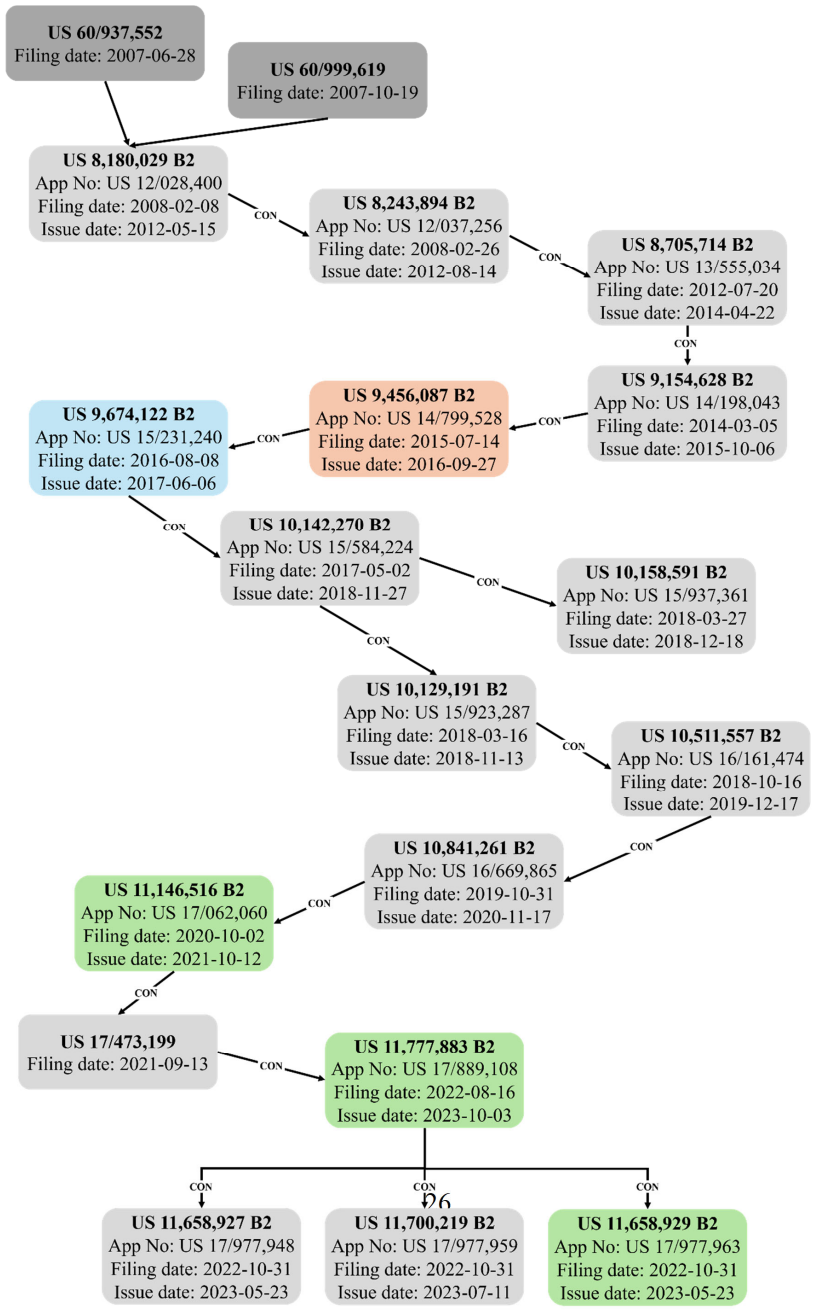
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Google, Inc. v. Voxer, Inc., et. al.
IPR2026-00423



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43. I am informed that the complete family, however, includes approximately 101 U.S. ~~nonprovisional~~non-provisional applications. EX1012.

44. ~~Over~~I understand that over time, the claims Voxer sought to obtain increasingly diverged from what it described in its applications. ~~EX1002, ¶44.~~ For example, in the '256 application, filed in 2008, I understand that Voxer originally described its invention as:

> "code, a method and communication device configured to progressively store streaming media created using the communication device, as the streaming media is created, so that a copy of the streaming media is stored on the communication device. The media is also progressively transmitted, during a transmission session, as the streaming media is created and stored, using a transmission protocol that (i) supports near-real-time communication so that the streaming media is delivered in near real-time to a second communication device associated with a recipient and (ii) guarantees delivery of the streaming media to the second communication device."

EX1008, p.620~~; EX1002, ¶44~~.

45. ~~In~~I further understand that in contrast, by the later '224 application, filed in 2017, Voxer distinguished its claims from the Enete reference, arguing that "[w]ith Enete, all video communication is synchronous, meaning an end-to-end network connection or session between the parties must first be established before

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any video communication may begin." EX1009, p.224~~; EX1002, ¶45~~. Instead, according to Voxer, "[t]he claims of the present invention are directed to video communication where (1) a recipient can review portions of the video **while the video is transmitted by the sender** and (2) **without first establishing an end-to-end connection** between sending and receiving devices." EX1009, p.225 (emphasis in original~~); EX1002, ¶45.~~). Voxer thus went from describing its alleged invention as streaming media "during a transmission session" to distinguishing it from a system allegedly employing an "end-to-end network connection or session" and presenting claims which affirmatively require streaming media "without first establishing an end-~~toend~~to-end connection between the sending and receiving devices."~~ EX1002, ¶45.~~

46. As another example, I understand that the '552 provisional application providing the foundation for all of Voxer's later applications explicitly stated that Voxer had not yet developed a system which could transmit video: "The only supported Media type for this prototype will be voice. Future versions will support text, video, position, and raw data Media." EX1010, p.14~~; EX1002, ¶46. The~~. In my opinion, the specification of the '883 patent itself is also clear on this point: "Although as of the filing of the present application, most conversations are voice only, it is intended that the communication system and method described herein

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broadly includes conversations including multiple media types, such as voice and video for example." ~~EX1001, 5:40-44; EX1002, ¶46. Despite never successfully developing a system which could in fact transmit video in the manner required by the claims, Voxer~~EX1001, 5:40-44. Voxer nonetheless expanded its claims over time to focus on "video media" as required by all claims of the '883 patent. ~~EX1002, ¶46.~~

47. ~~Voxer's prosecution strategy has been a long war of attrition. For~~I further understand that, for example, in the '256 application, Voxer originally presented 22 claims, then added 21 more, then canceled those 43 claims, and added 63 new claims, (EX1008, p.75, p.166, p.344), then after a Non-Final Office Action, canceled all 106 previously-presented claims, and added 81 new claims (*id.*, p.608, p.620). In addition, I understand that Voxer not only pursued a voluminous number of patents over the years (*see* EX1012), but it would ~~regularly~~ present large numbers of claims. This can be seen in the '883 patent which contains 65 claims. ~~EX1001.~~ EX1014. I further understand that Voxer would also take actions such as filing applications like the '528 application, with one broad claim, (EX1015, p.124), receive a Non-Final Rejection, and then amend the application to include numerous new claims. *Id.*, pp.184-188~~; EX1002, ¶47~~.

48. ~~By~~I understand that by the time of the prosecution of the '108 application leading to the '883 patent in 2023, the Office was no longer rejecting

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Voxer's claims over the prior art, but instead, was simply rejecting them for double patenting over Voxer's other patents. EX1007, pp.495-501. During prosecution of the '108 application, the Examiner did not reject the claims in view of the prior art. Instead, the Examiner issued double patenting rejections over prior related patents, in response to which Voxer submitted terminal disclaimers. The Examiner's Notice of

~~Voxer submitted terminal disclaimers. The Examiner's Notice of~~Allowance stated the following regarding the claimed invention: "This invention pertains to telecommunications, and more particularly, to a telecommunication and multimedia management method and apparatus that enables users to review the messages of conversations in either a live mode or a time-shifted mode and to transition the conversation back and forth between the two modes, participate in multiple conversations and to archive the messages of conversations for later review or processing." EX1007, p.595. The Examiner identified the E2E Limitation (defined below), among other claim elements, as being missing from the prior art. ~~*Id.*, pp.595-598; EX1002, ¶48.~~

Id., pp.595-598.

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VI. RELEVANT TIMEFRAME FOR DETERMINING OBVIOUSNESS

49. I understand that obviousness must be evaluated at the time before the effective filing date of the claimed invention. From the first page of the '883 patent, I understand that the first patent applications provisional applications) were filed on June 28, 2007 and October 19, 2007. EX1001, codes (60), (63)). However, as I explain below in §IX of this declaration, in my opinion, the earliest possible priority date for the challenged claims is August 8, 2016 (i.e., filing of App. No. ~~V.~~ 15/231,240) because each claim recites a negative limitation ("the E2E Limitation") that is not found in any of the earlier-filed applications. I will assume for the purpose of this declaration that August 8, 2016, is the effective filing date of the claimed invention, with the understanding that my testimony will also be applicable to some time prior to that date. I may refer to this time period as the "relevant time frame," and my testimony concerning obviousness is directed to this timeframe, even if I occasionally do not explicitly use a past tense.

VII. LEVEL OF ORDINARY SKILL IN THE ART

50. ~~A~~I understand that the legal question of obviousness must be assessed from the perspective of a person having ordinary skill in the art ("PHOSITA") at the time of the invention. In my opinion, a person having ordinary skill in the art ("PHOSITA") would have had at least (1) a Bachelor's degree in electrical or computer engineering or a related course of study with at least two years of work

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experience in industry in the areas of computer networking, multimedia processing, or a related area of work or (2) a Master's degree in electrical or computer engineering or a related course of study, with at least one year of experience in industry in the areas of computer networking, multimedia processing, or a related area of work. ~~EX1002, ¶50.~~ A higher level of education could substitute for less industry experience, and more industry experience could substitute for the specific level of education. ~~EX1002, ¶50~~My testimony concerning obviousness is offered from this perspective even if I do not explicitly state so.

51. In my opinion, I would have met this standard as of the relevant time August 8, 2016 (i.e., filing of App. No. ~~VI.~~ 15/231,240) and continue to do so today. To the extent I exceed the minimum qualifications of a PHOSITA during the relevant time period, my opinions in this declaration are presented from the perspective of a

PHOSITA.

VIII. CLAIM CONSTRUCTION

52. ~~The~~In my opinion, the specification and prosecution history point toward constructions for a large number of terms, some of which are found in the claims. *See, e.g.*, EX1001, 7:50-12:14 ("Glossary~~"); EX1002, ¶52. Although it is~~

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~~not clear which (if any) of those terms will need to be construed,[3] Petitioner will not take a position in the Litigation that is inconsistent with any of the understandings reflected herein. Also, Petitioner will promptly notify the Board of any claim construction it proposes to the District Court to permit verification of this consistency~~"). I have applied an understanding of the claims consistent with the specification and prosecution history in evaluating the claims.

~~Moreover, it is unlikely that the Board will need to address claim construction in this proceeding. *See Realtime Data, LLC v. Iancu*, 912 F.3d 1368, 1375 (Fed. Cir.~~

53. ~~2019) (PTAB need only construe terms to the extent needed to resolve disputes). Because~~I note that the primary reference (Katis) is a publication from the nominal priority chain of the '883 patent and is thus substantially similar to the specification of the '883 patent. I have interpreted the claims consistently in evaluating written description and priority as well as in evaluating the applied prior ~~'883 patent (EX1002, ¶53), the parties are less likely to dispute claim constructions. VII.~~ art.

~~[3] The parties have not yet identified the asserted claims, infringement contentions, or invalidity contentions, so it is unknown whether there will be any disputes regarding the proper understanding of the claims.~~

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IX. PRIORITY DATE FOR THE CHALLENGED CLAIMS

~~The~~54. As noted above, the '883 patent includes a lengthy priority claim (*see* EX1001, codes (60), (63)); however, in my opinion, the earliest possible priority date for the challenged claims is August 8, 2016 (i.e., filing of App. No. 15/231,240) because each claim recites a negative limitation ("the E2E Limitation") that is not found in any of the earlier-filed applications. ~~EX1002, ¶54.~~

A. The E2E Limitation

Claim 1 of the '883 patent recites "enabling the one or more second client devices to render the … portions of the video media of the video message in a ~~realtime~~real-time mode: (a) while the video media … is streamed by the first client device; and (b) without first setting up an end-to-end connection over the network between the first client device and any of the … second client devices." EX1001, 46:14-22. Claim 1 also recites an "infrastructure" that receives the video media and streams the "portions" to the "one or more" second devices. EX1001, 46:6-12. Together, these limitations are referred to herein as the "**E2E Limitation**." Each of the other independent claims of the '883 patent also includes substantially similar language.

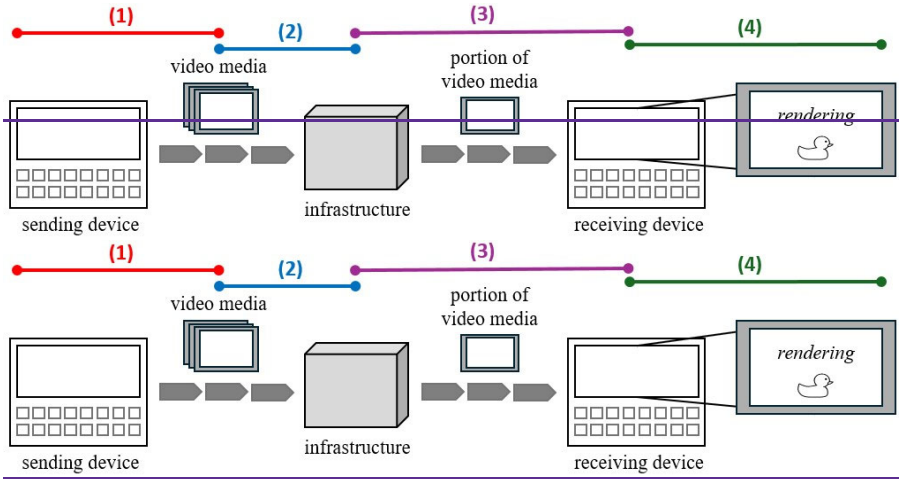
55. ~~EX1001; EX1002, ¶55.~~EX1001. In particular, claims 35 and 49 each recite "enabling the one or more second devices to render the … portions of the

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video media of the video message in a real-time mode: (a) while the video media … is streamed by the first device; and (b) without first setting up an end-to-end connection over the network between the first device and any of the … second devices" (EX1001, 49:40-47, 51:4-11), and claim 58 recites "enabling the one or more second devices to render the … portions of the video media of the video message broadcast in a real-time mode: (a) while the video media … is streamed by the first device; and (b) without first setting up an end-to-end connection over the network between the first device and any of the … second devices" (EX1001, 52:14-23). Also, each of claims 35, 49, and 58 recite an "infrastructure" that receives the video media and streams the "portions" to the "one or more" second devices. EX1001, 49:30-38, 50:63-51:2, 52:4-12.

56. This dense claim language can be summarized with a few architectural requirements and some temporal ones. Architecturally, (1) a sending ("first") device transmits ("stream[s]") video media of a video message; (2) an infrastructure receives that video media; (3) the infrastructure streams portions of the video media to a receiving ("second") device; and (4) the receiving device is able to render those portions. ~~EX1002, ¶56.~~ These requirements are illustrated in the graphic below.

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57. As for the temporal requirements, the claim language specifies that the receiving device must be able to render the portions of video media ***while*** the sending device is transmitting the video media—i.e., #4 must occur while #1 is occurring. ~~EX1002, ¶57.~~ In addition, the recited "portions of video media" and the "video media" are both "of the video message" (i.e., #4 and #1 involve the same message), and as a result, the sending and receiving devices must concurrently transfer data for the message to/from the infrastructure—i.e., #2 and #3 must also be concurrent. ~~EX1002, ¶57.~~ This means that the sending and receiving devices must each be connected to and in communication with the infrastructure (i.e., the sending and receiving devices must both be online) at the time. ~~EX1002, ¶57.~~ In

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addition, all of this must occur ***without*** first setting up an end-to-end connection between the sending and receiving devices. ~~EX1002, ¶57.~~

58. As a result, the E2E Limitation requires (1) the receiving device to be able to render portions of video media ***while*** the sending device is transmitting the video media (which requires both the sending and receiving devices to be online) and (2) that this occur ***without*** having first established an end-to-end connection between the sending and receiving devices. ~~EX1002, ¶58.~~

B. ~~—~~The Priority Date of the '883 Patent is no Earlier than August 8, 2016.

59. All challenged claims of the '883 patent effectively recite the E2E Limitation. ~~EX1002, ¶59.~~ Arguable support for the E2E Limitation, however, was not present in applications in the priority chain of the '883 patent until the filing of U.S. App. Ser.

No. 15/231,240, on August 8, 2016. ~~EX1002, ¶59.~~ As a result, in my opinion, all claims of the '883 patent are entitled to a priority date of no earlier than August 8, 2016, and both ~~Katis and Abbazia qualify as prior art.~~[4] ~~EX1002, ¶59.~~

[4] ~~Even if the claims were entitled to a slightly earlier date, Katis and Abbazia would still both qualify as prior art so long as the priority date is after July 13, 2010.~~

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1. Legal Standards

"It is elementary patent law that a patent application is entitled to the benefit of the filing date of an earlier filed application *only if* the disclosure of the earlier application provides support for the claims of the later application, as required by 35 U.S.C. § 112." *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1306 (Fed. Cir. 2008) (emphasis added). "To satisfy the written description requirement [in § 112,] the disclosure of the prior application must convey with reasonable clarity to those skilled in the art that, as of the filing date sought, the inventor was in possession of the invention." *Id.* (cleaned up).

A disclosure that merely renders the claims **obvious** does not provide sufficient written description support. *See Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1352 (Fed. Cir. 2010) (en banc). "[T]he written description [must] actually or inherently disclose the claim element," and the fact that a PHOSITA "*might* be able to construct [it] … from the teachings of the disclosure" is insufficient. *PowerOasis*, 522 F.3d at 1306-07; *see D-Three Enters., LLC v. SunModo Corp.*, 890 F.3d 1042, 1052 (Fed. Cir. 2018) ("[A]dequate written description does not ask what is permissible, rather, it asks what is disclosed.").

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~~The legal standard is substantially the same for negative limitations, like the E2E Limitation ("without first establishing"). *See Novartis Pharms. Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013, 1016-18 (Fed. Cir. 2022). For a negative limitation, "the written description requirement cannot be met through simple disregard of the presence or absence of a limitation." *Id.* at 1017. But the requirement may be satisfied if a PHOSITA would understand the specification to: (1) "describe[] a reason to exclude the relevant element," e.g. by "expressly listing the disadvantages of using that element" or "distinguish[ing] among the element and alternatives to it" (*id.* at 1016), or (2) "inherently disclos[e] the negative limitation" such that it "would always be understood by skilled artisans as being necessarily excluded" (*id.* at 1017-18).~~

~~2.~~ Katis and Abbazia qualify as prior art.[5]

[5] I understand that even if the claims were entitled to a slightly earlier date, Katis and Abbazia would still both qualify as prior art so long as the priority date is after July 13, 2010.

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C. The Priority Applications Filed Prior to August 8, 2016 Lack Support for the E2E Limitation

60. Before it was ~~injected~~added into claim language of the application filed August 8, 2016 (the '240 application), the E2E Limitation was not present in the applications that allegedly support the '883 patent's priority chain. ~~EX1002, ¶60.~~ The application immediately prior to the '240 application was App. Ser. No. 14/799,528, filed July 14, 2015. EX1006. ~~This~~I understand that this '528 application is representative of prior applications (which do not significantly differ in their disclosure of the E2E Limitation), and will be referred to as "**the '528 Specification**" in the following analysis. EX1006 (the '528 application); EX1018-1021 (prior non-provisional applications); ~~EX1010-1011 (provisional applications);~~ EX1016 (Redline of '528 application as compared to '883 patent~~); EX1002, ¶60.~~). I also reviewed the provisional applications and see no disclosure of the E2E Limitation. EX1010; EX1011.

61. As explained above, the E2E Limitation requires (1) the receiving device to be able to render portions of video media while the sending device is

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transmitting the video media (which requires the sending and receiving devices to both be online), and (2) that this occur without having first established an end-~~to-end~~toend connection between the sending and receiving devices. ~~This~~ In my opinion, this limitation is not disclosed in the '528 Specification. ~~EX1002, ¶61. *See Novartis*, 38 F.4th at 1016.~~

62. First, the '528 Specification does not expressly describe the E2E Limitation. There is simply no express discussion of the need/ability to avoid or omit an end-~~toend~~ to-end-connection before exchanging video media between online devices, as required by the E2E Limitation. ~~EX1002, ¶62. *See D Three Enters.*, 890 F.3d at 1052 ("[A]dequate written description does not ask what is permissible, rather, it asks what is disclosed.").~~

63. Second, a PHOSITA would not infer, from the Specification, any reason to avoid, or advantage in avoiding, end-to-end connections before exchanging video media between online devices. ~~EX1002, ¶63.~~ In fact, where the '528 Specification discusses interaction between the first and second devices, it implies that an end-~~toend~~to-end connection is useful. ~~EX1002, ¶63.~~ For example, the '528 Specification states that client 12 in device 13 includes modules 40 and 44, which facilitate "multi-party ***end-to-end authentication, encryption and security*** … ***between Clients 12***." EX1006, ¶82 (emphasis added~~); EX1002, ¶63.~~). In other words, the '528

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Specification teaches that *establishing* an end-to-end connection between online devices provides an *advantage*, i.e., ~~end to~~endto-end encryption. EX1006, ¶82~~;~~ ~~EX1002, ¶63~~. Also, the '528 Specification elsewhere implies other advantages to such a connection, such as packet acknowledgement (EX1006, ¶120) and sharing of presence data to optimize network utilization (EX1006, ¶20). ~~EX1002, ¶63.~~

64. In my opinion, Voxer may ~~argue~~contend that the '528 Specification also includes *disadvantages* of an end-to-end connection in paragraphs 3, 6, 11, 19, and 39(iv), but such an argument would be misplaced. ~~EX1002, ¶64.~~ Each such paragraph is directed to the situation where one of the devices is ***unavailable*** (i.e., the devices are not both online). ~~EX1002, ¶64.~~ Indeed, the purpose of these passages is to explain that, when a recipient is unavailable, a sender can still transmit a message. ~~EX1002, ¶64.~~ Moreover, the solution described is ***not*** related to an end-to-end connection (or the lack thereof), but rather storing messages in a number of locations so that the recipient can review the messages in a time-shifted mode after the recipient becomes available. *See, e.g.*, EX1006, ¶19, ~~¶39(iv), ¶110; EX1002, ¶64.~~

¶39(iv), ¶110. This is shown, for example, in paragraph 39(iv), which states:

> iv. enabling users to participate in conversations without waiting for a connection to be established with another participant or the network. ***This attribute allows users to begin conversations, participate in***

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conversations, and review previously received time-shifted messages of conversations even when there is no network available, when the network is of poor quality, or other participants are unavailable.

EX1006, ¶39(iv)(emphasis added).

65. Because the '528 Specification does not describe the E2E Limitation, nor provide disclosure that would allow a PHOSITA to conclude that the E2E Limitation would be advantageous, in my opinion, it does not provide sufficient support for the E2E Limitation to support a priority claim earlier than the filing of the '240 Application on August 8, 2016.

~~8, 2016. EX1002, ¶65.~~

~~VIII~~X. DETAILED EXPLANATION OF THE REASONS FOR UNPATENTABILITY

Ground 1. Claims 1-65 are Obvious over Katis and Abbazia

66. ~~Claims~~It is my opinion that claims 1-65 would have been obvious over Katis (EX1004) and Abbazia (EX1005). ~~Both~~

67. I understand that both Katis and Abbazia are prior art ~~under AIA 35 U.S.C. §§ 102(a)(1) and/or (a)(2)~~ when the correct priority date of no earlier than August 8, 2016 is used ~~(see §VII beginning on page 12, above).~~ .

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68. Katis is a U.S. Patent application publication, published on January 1, 2009, and Abbazia is a U.S. Patent issued on July 13, 2010.

69. ~~—~~I understand that Abbazia was not cited during the prosecution of any application leading to the '883 patent, and Katis, as an application in the priority chain, was not considered to be prior art.

A. ~~—~~Overview of the Combination

70. In my opinion, Katis in view of Abbazia renders the challenged claims obvious.

71. **Katis** teaches the same system of the claims of the '883 patent, except that it does not disclose the E2E Limitation, as described above. ~~EX1002, ¶71.~~

Abbazia discloses the E2E Limitation in the context of a Multicast network for efficient distribution of video messages. ~~Note~~I note that a certificate of correction issued August 6, 2013 replaced Abbazia's drawings (EX1005, pp.20-30), but Abbazia's corrected figures 6 and 7 were part of the original application filing on

72. May 3, 2004 (EX1017). ~~EX1002, ¶72.~~

1. Overview of Abbazia

73. Specifically, Abbazia discloses a system such as the one shown in Fig. ~~1, reproduced here:~~

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1, reproduced here:

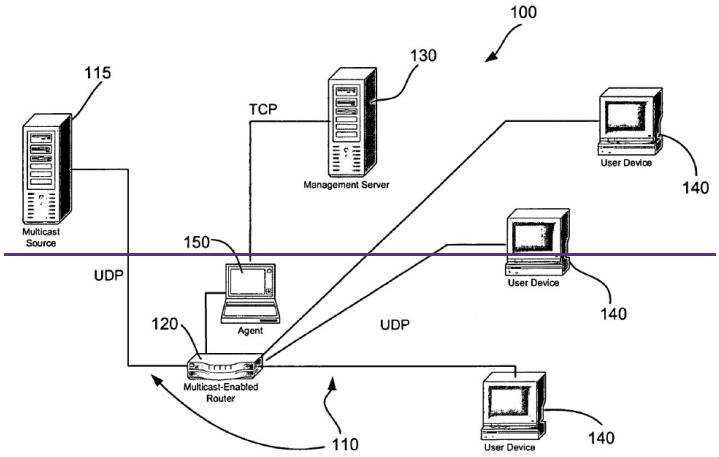


FIG. 1

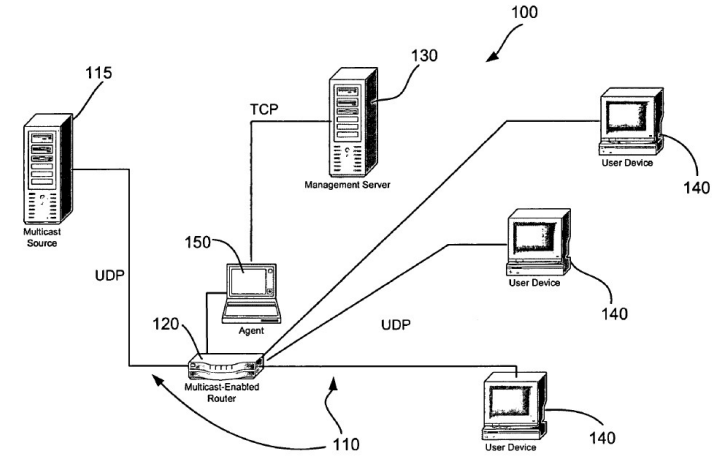


FIG. 1

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EX1005, Fig. ~~1; EX1002, ¶73~~1. In Fig. 1, there is a Multicast feed source 115 on the left, which can be any computer or server. EX1005, 3:64-67, 6:7-8~~; EX1002, ¶73.~~. Streaming media (e.g. video) packets from the feed source 115 are sent to a Multicast-enabled router 120, which in turn sends the packets to user devices 140. EX1005, 12:6-8 (streaming media),

~~Multicast-enabled router 120, which in turn sends the packets to user devices 140. EX1005, 12:6-8 (streaming media),~~ 1:17-20 (video), 6:6-13 (packets sent to 120), 4:17-20 (forwarding packets by 120~~); EX1002, ¶73.~~).

74. "Multicast" is a well-known Internet standard for efficient communications~~. EX1002, ¶74 (citing EX1022-1024).~~, and was well known as of the relevant time. *See* EX1022-1024; *infra* § X.B (discussing the rationale supporting obviousness). In Multicast, a Multicast sender sends a packet to a "Multicast address", which is an IP address reserved for a particular Multicast group. ~~EX1002, ¶74 (citing EX1022, p.1).~~*See, e.g.*, EX1022, p.1 (explaining that, in IP multicasting, packets are delivered to "a set of … hosts identified by a single IP destination address"). When a packet addressed to a Multicast address is received at a Multicast-enabled router, the router forwards the packet to devices on its local network that have opted to receive packets addressed to the Multicast address. ~~EX1002, ¶74 (citing~~*See,*

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e.g., EX1022, p.1~~).~~ (describing function of multicast routers).

75. The Multicast method produces a significant gain in efficiency, because it allows part of the path to be traversed by a single packet. ~~EX1002, ¶75.~~ For example, when transmitting a packet from source 115 to devices 140 in Fig. 1 of Abbazia, only one packet (addressed to a Multicast IP address) need be sent from the source 115 to the router 120. In contrast, a non-Multicast (*e.g.* "unicast") transmission mode would send ***three*** packets along this path, each addressed to one of the three user devices 140. Multicast thus reduces traffic by a factor approximately equal to the number of recipients along certain parts of the path to a recipient. ~~EX1002, ¶75.~~

76. To Multicast, Abbazia adds a management server 130. EX1005, Fig. 1, Abstract, 3:64-4:9. The management server listens to Multicast links and collects data, enabling users to monitor statistics and related information concerning the Multicast, and to generate reports in substantially real time. EX1005, 5:13-15; 7:45-~~Multicast, and to generate reports in substantially real time. EX1005, 5:13-15; 7:45-~~ 8:24~~; EX1002, ¶76.~~ .

2. The Combination

~~This Ground posits that~~In my opinion, it would have been obvious to include a Multicast option within the Katis system. Specifically, it would have been obvious to a

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77. PHOSITA to allow a Katis server to transmit to a Multicast address for real-time video. ~~EX1002, ¶77.~~ In that sense, a Katis server 16 would be a Multicast feed source 115 as taught by Abbazia, and shown below in a modified version of Fig. 1 of Katis (left side) connected to modified Fig. 1 of Abbazia (right side), together indicating a direction of transmission from Katis client 12_1 of device 13_1 (left side) to other users 140 (right side):

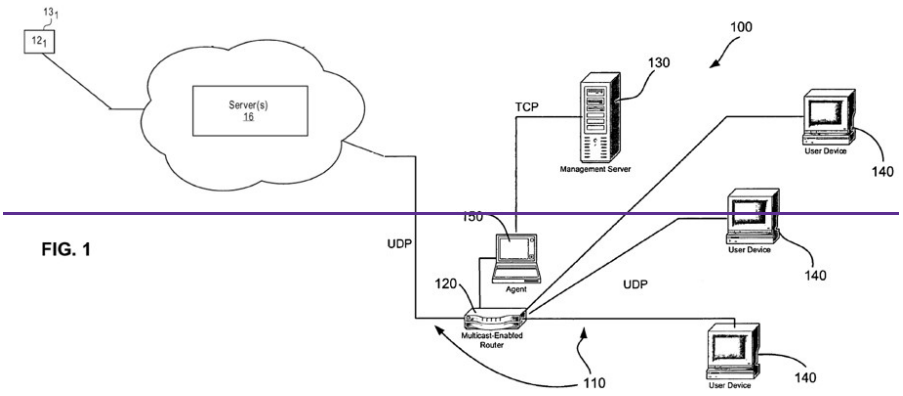


FIG. 1

FIG. 1

~~EX1002, ¶77.~~

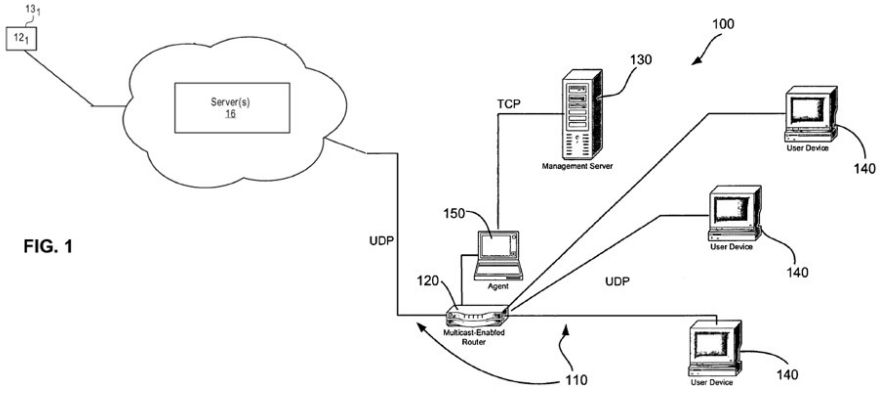


FIG. 1

FIG. 1

In the modified figure, user devices 140 would be user devices of the Voxer system from Katis. ~~EX1002, ¶77.~~ The client 12_1 would send real-time video packets to the Voxer server 16, which forwards them to a Multicast address.

~~EX1002, ¶77.~~

In the combination, the Katis user would initiate a conversation as usual, but user devices and/or the server would have the option (implemented by simple programming changes at the Katis server 16) to use Multicast. ~~EX1002, ¶78.~~ Katis explains that "[a] User creates a Conversation … by inputting a Conversation name

78. [and] a list of Contacts, and an optional scheduled start time," which may be "immediate." EX1004, ¶0257. If Multicast is elected, a Multicast address would be acquired and sent by the server 16 with a notification of an upcoming (or

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impending) real-time video message to Voxer users, allowing any user in the conversation to receive the real-time video via Multicast and benefit from the improved efficiency. ~~EX1002, ¶78.~~ Voxer packets would be sent to the server(s) 16 as usual, but would be forwarded to the Multicast address for Voxer users in the conversation who elect to receive packets via Multicast (or for whom that election is made). ~~EX1002, ¶78.~~ The Multicast address would simply provide an alternate, more efficient, pathway for real-time video, from which any Voxer user in the conversation could elect to receive. ~~EX1002, ¶78.~~ Voxer users receiving real-time video from a Multicast address can send reply packets back to the Katis servers directly, with no change. ~~EX1002, ¶78.~~ All users would send and receive Vox packets in their usual form, with no change, including the conversation ID, sequence ID, and other data as taught by Katis. ~~EX1002, ¶78; *see*~~*See* EX1004, ¶¶0063, 0065, 0091, 0180-0184, 0191, 0257, 0267. With the combination, a server and/or user device may decide to use Multicast to transmit to a set of recipients in appropriate circumstances (e.g., a large number of recipients, common network infrastructure used for a set of recipients, and/or limited network bandwidth). ~~EX1002, ¶78.~~

79. ~~A~~In my opinion, a PHOSITA would also have found it obvious to use Abbazia's monitoring system to "address the need for real-time management of the

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multicast feeds from a monitoring perspective, while maintaining low overhead and resource requirements" if desired. EX1005, 2:24-27~~; EX1002, ¶79.~~.

B. Rationale (Motivation) Supporting Obviousness

~~A~~ 80. In my opinion, a PHOSITA would have been motivated to add Multicast functionality, in the manner described above, to Katis.~~ EX1002, ¶80.~~ Abbazia teaches that Multicast increases transmission efficiency by reducing the need to send the same packet multiple times to reach multiple endpoints:

> "Methods have been developed for **reducing the overhead** associated with connection based protocols, by using connectionless protocols, such as UDP (user datagram protocol) over an IP network. These connectionless protocols typically rely on a broadcast or '**multicast**' model wherein **a single message is broadcast to a multiple receiving systems without forming a connection** with the individual systems. Essentially, multicasting enables a source to transmit messages to a plurality of hosts which have been collectively identified by a single IP destination address, **rather than** ~~to each hosts' unique IP address individually."~~ **to each hosts' unique IP address individually**."

EX1005, 1:35-45 (emphasis added~~); EX1002, ¶80.~~).

81. ~~Abbazia notes that avoiding the need to form~~As I explained above, the E2E Limitation requires that certain steps occur without having first established an end-to-end connection between the sending and receiving devices. *Supra* at §IX.A.

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I understand that, in an *inter partes* review of a related patent, Voxer took the position that "an end-to-end connection" includes a connection "in which the sending and receiving devices directly communicate with each other." EX1025, p.31 (IPR2021-00113, Patent Owner's Preliminary Response). Abbazia notes that avoiding the need to form such a connection between sender and receiver increases efficiency, stating "[t]he multicast approach eliminates the undesirable overhead associated with forming connections with each system…." EX1005, 2:4-5, 1:28-34~~; EX1002, ¶81.~~ A PHOSITA would have seen a significant benefit to transmitting packets to a Multicast address to reach multiple intended recipients, in order to achieve the efficiency gain of Multicast techniques. ~~EX1002, ¶81 (citing~~*See, e.g.*, EX1024, p.1~~; EX1025).~~ ("IP multicast provides a method of efficient many-to-many communication."). A PHOSITA would have seen this as in accord with Katis' desire to optimize "[t]he utilization of network bandwidth" and "minimizing real-time bandwidth". EX1004, ~~"minimizing real-time bandwidth". EX1004,~~ ¶¶0041 (optimizing), 0163 (minimizing), 0143, 0145; ~~EX1002, ¶81 (citing~~*see, e.g.*, EX1024, p.2~~).~~ ("Sending multiple unicast packets … increas[es] bandwidth requirements and costs"; "[i]nstead, data to multiple destinations can be delivered using multicast." (emphasis omitted)). A PHOSITA likewise

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would have seen an advantage for transmitting devices, which only have to send one packet to reach N recipients, as opposed to sending N packets. ~~EX1002, ¶81 (citing EX1024, p.2).~~ *See, e.g.*, EX1024, p.2 ("Multicast allows the source to send a single copy of data, using a single address for the entire group of recipients."). In the combination, both the client and the server(s) 16 of Katis would only need to transmit 1 packet for every device listening to the Multicast address, and each listening device would receive better network performance because of the reduced traffic Multicast enables. ~~EX1002, ¶81.~~ The efficiency gain increases with the number of recipients, and would be especially advantageous where a video message is being broadcast to a large number of users. ~~EX1002, ¶81.~~

82. A PHOSITA would have seen additional advantages in using the Multicast system of Abbazia with Katis. ~~EX1002, ¶82.~~ As Abbazia notes, "[Multicast] suffers from the inability to guarantee receipt of messages to all systems. For IP networks, multicast is unreliable by design in order to reduce overhead of sending packets to multiple destinations." EX1005, 2:7-10~~; EX1002, ¶82.~~. In other words, as Abbazia notes, a PHOSITA would have understood that a disadvantage of multicast is that the protocol itself does not necessarily ensure that each packet is delivered to the receiver (because recipients do not send acknowledgements to confirm receipt of packets). ~~EX1002, ¶82.~~ A PHOSITA,

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however, would also have known that various techniques could be used to allow the receiver to detect packet loss (e.g., by sequentially numbering the packets), and a PHOSITA would have understood that real-time video playback is highly tolerant of packet loss. ~~EX1002, ¶82 (citing EX1023).~~Indeed, IP multicast was used for real-time video and other similar applications more than twenty years before the effective filing date of the '883 patent. *See* EX1023. In fact, in a *New York Times* article published in 1995, Mr. Steve Deering (author of RFC1112 (EX1022)) said that the multicast backbone used on the Internet at the time "could become a sort of global video telephone system that allows groups of people -- not just individuals -- to share voice and data and images in 'real time' over the Internet." EX1023, p.1. Furthermore, for real-time video, a Multicast network needs to transmit fewer packets than a unicast network like Katis', and for that reason, will have a lower error rate due to reduced network congestion. ~~EX1002, ¶82.~~ Furthermore, a PHOSITA would generally have found Katis' use of sequence IDs (which are added numbers within packets, one per packet occurring in a sequence among subsequent packets, that allow recipients to observe when a sequence-numbered packet is missing) advantageous with Abbazia's system, because it would increase reliability by allowing devices "to determine if an entire message or some portion of a message is missing.~~"~~". EX1004, Figs. 4C and 4D, ¶¶0115, 0180-0183~~; EX1002, ¶82.~~. This

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notably tracks Abbazia's suggestion to use sequence numbers. EX1005, 6:65-7:1~~; EX1002, ¶82.~~.

83. A PHOSITA would further have found it obvious to allow a user to encrypt messages to be read, as taught by Katis (EX1004, ¶¶0103, 0102, 0059, 0061, 0170), when including a Multicast address in a conversation, to avoid eavesdropping by third parties. ~~EX1002, ¶83.~~ A PHOSITA further would have found it obvious to enable Voxer users to participate in conversations by sending return messages to the Voxer infrastructure including a conversation identifier and sequence ID, based on the teachings of Katis. EX1004, ¶¶0003, 0182, 0019-0020, 0063, 0065-0068, 00380053~~; EX1002, ¶83~~.

84. The combination would have also ~~have~~ been obvious ~~under *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417-21 (2007). Specifically,~~because Katis teaches the known problems of developing systems that effectively use network bandwidth (especially for multimedia communications). EX1004, ¶¶0041, 0163, 0143, 0145~~; EX1002,~~.

~~¶84.~~ As described above, Abbazia teaches a known technique and solution (Multicast in Abbazia's system) to address this problem, that could have been applied by a PHOSITA with predictable results. ~~EX1002, ¶84.~~ In the relevant timeframe, Multicast was part of a known Internet standard (EX1022) and had been successfully

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used for video broadcasting~~. EX1002, ¶84 (citing EX1022-1024).~~ (EX1023; EX1024).

C. Reasonable Expectation of Success

85. ~~A~~In my opinion, a PHOSITA would have had a reasonable expectation of success in making the proposed combination. ~~EX1002, ¶85.~~ The art in the relevant timeframe was predictable. ~~EX1002, ¶85.~~ For example, as I explained above, multicast was well-known and a PHOSITA would have known how to implement its use according to the proposed combination. *See, e.g.*, EX1005, 1:35-45; ~~EX1002, ¶85; *see also* *supra* §VIII~~X.A (describing the combination), ~~§VIII.B (rationale supporting obviousness).~~

§X.B (addressing the rationale supporting obviousness).

D. Analogous Art

86. In my opinion, Katis and Abbazia are analogous art because they are in the same field as the '883 patent (telecommunications and multimedia communications). EX1001, Title, Abstract, 1:40-4:23; EX1004, Title, Abstract, ¶¶0002-0018; EX1005, Title, Abstract, 1:5-10~~; EX1002, ¶86.~~. Katis addresses the same problems faced by the inventors because it is a publication of an application within the claimed priority chain of the '883 patent. EX1001, Title, Abstract, 1:40-4:23; EX1004, Title, Abstract, ¶¶0002-0018~~; EX1002, ¶86~~. Abbazia also addresses several problems

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faced by the inventors including efficiently transmitting and delivering media over a network. ~~EX1001, 1:55-4:23; EX1004, ¶¶0002-0018, 0041, 0163, 0143, 0145;~~ EX1001, 1:55-4:23; EX1004, ¶¶0002-0018, 0041, 0163, 0143, 0145; EX1005, 1:35-45, 2:4-5, 1:28-34~~; EX1002, ¶86.~~ .

E. ~~—~~Graham Factors

87. The **level of ordinary skill** in the art is as set forth above in §VII.

88. The **scope and content of the prior art** are discussed throughout the Ground.

89. The differences between the prior art and the claims are discussed throughout the Ground.

90. I am not aware of any **secondary considerations** that would make an inference of non-obviousness more likely, as I discuss in more detail in paragraph 198.

F. Claim Mapping

91. This section maps the challenged claims to the relevant disclosures of Katis and Abbazia, where the claim text appears in bold-italics, and the relevant mapping follows.

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CLAIM 1

"1[Pre]. A method comprising: maintaining a communication infrastructure on a network;"

92. ~~The~~In my opinion, the combination renders obvious a **maintained infrastructure**. In the combination, the "**communication infrastructure**" includes the Katis system as combined with the system of Abbazia, as shown above in §~~VIII~~X.A.2. ~~EX1002, ¶92.~~ The "communication infrastructure" includes Katis' server(s) 16, other components in network 14 as modified (such as multicast-enabled routers), and/or the user devices. ~~EX1002, ¶92.~~

93. Katis teaches that client devices are connected to each other via a **maintained communication infrastructure** including a plurality of servers on a network. EX1004, ¶¶0101, 0177, 0185-0189, 0061, Fig. 1.

~~EX1004, ¶¶0101, 0177, 0185-0189, 0061, Fig. 1; EX1002, ¶93.~~

94. Katis shows an infrastructure in Fig. 1, reproduced here:

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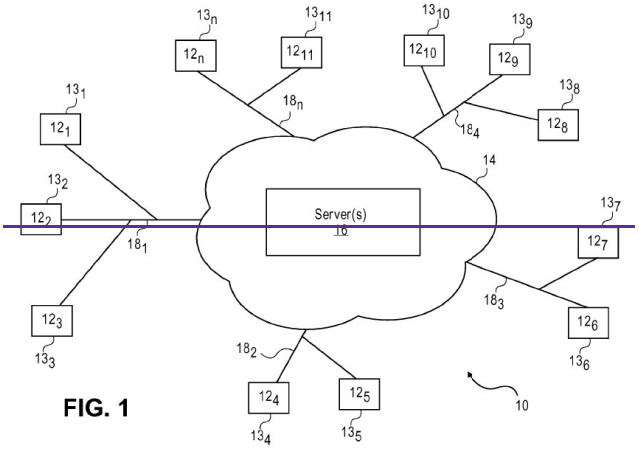


FIG. 1

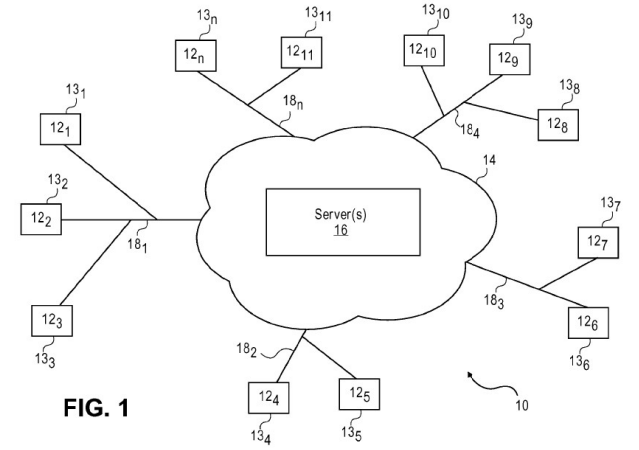


FIG. 1

EX1004, Fig. 1, ¶0022~~; EX1002, ¶94.~~ . Fig. 1 shows clients 12 running on devices 13 and in communication over "communication services **network** 14, including one or more **~~Servers 16~~**". ~~EX1004, ¶0101 (emphasis added); EX1002, ¶94. Katis~~ **Servers 16**". EX1004, ¶0101 (emphasis added). Katis explains that:

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> "Clients 12_1 through 12_n communicate with one another and with Servers 16 over the networks 18_1 through 18_n and network 14 using individual message units referred to as 'Vox packets', which are described in detail below."

EX1004, ¶0101~~; EX1002, ¶94~~.

The infrastructure allows clients 12 to participate in a **video messaging** conversation (**communication**). EX1004, Abstract, ¶¶0042-0050, 0177, 0075,

95. 0063-0065, 0003, 0019-0020, 0245, 0060, 0087~~; EX1002, ¶95~~.

96. The Katis infrastructure participates in the infrastructure of the combination, where the infrastructure of the combination has an alternate Multicast pathway to send real-time video. ~~EX1002, ¶96.~~

"[1a] receiving, at the communication infrastructure, information from a first client device used by an initiating participant, the information for forwarding video media of a video message, the video message initiating a multi-media conversation,"

~~The~~97. In my opinion, the combination renders obvious a communication infrastructure

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receiving information from a first client device used by an initiating participant for **forwarding video media of a video message** that is transmitted by a sending **first client device**. EX1004, ¶¶0038, 0041, 0063, 0107, ~~**0124, 0132, 0143, 0174,**~~ 0124, 0132, 0143, 0174, 0194, 0203-0204, 0209, Fig. 1~~; EX1002, ¶97~~. In the combination, the "infrastructure" includes the Katis system as combined with the system of Abbazia, as shown above in §~~VIII~~X.A.2 and discussed in element ~~1[Pre~~[1Pre].

98. Katis teaches that user **devices 13 send** messages containing media to servers 16 (part of the **infrastructure**), where the messages include **information** indicating that a message belongs to a conversation. ~~EX1002, ¶98.~~ Katis states:

> "Message: An individual unit of communication f**rom one User to another. Each Message consists of** some sort of Media, such as voice or video. Each Message is assigned certain attributes, including: (i) the User sending the message; (ii) **the Conversation it belongs to**; (iii) an optional or user created Importance Tag; (iv) a time stamp; and (v) the Media payload."

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EX1004, ¶0063, *see also* EX1004, ¶¶0038-0040, 0041, 0065, 0132, 0257, 0057, 0059-0060, 0063-0065, 0087, 0180-0181, 0247; EX1011,[6] p.39 ("2. Payload Data a. Conversation Identifier b. Message Identifier"), p.44 ("Data Elements … 3. Recipient Data b. Identifier (transmission target)"). ~~EX1002, ¶98.~~

99. Information **initiating** the conversation is provided in connection with an initial message from a first user. ~~EX1002, ¶99.~~ Katis explains:

> "**Create a Conversation 1104 b**—A User creates a Conversation through the interface 110 by inputting a Conversation name, **a list of Contacts**, and an optional scheduled start time. If no start time is designated, it is assumed the start time is immediate. In response, the MCMS application 20 creates a new Conversation in the database 22, **associating records for each Participant on the Contacts list**."

EX1004, ¶0257; claim element 1[Pre~~];~~ ~~EX1002, ¶99.~~]. "When new Messages are created, they either define a new Conversation, or they are added to an existing Conversation." EX1004, ¶0065~~; EX1002, ¶99.~~ .

[6] I understand that Katis incorporates by reference U.S. Provisional Application No. 60/999,619 (contained in EX1011). EX1004, ¶0001.

Google/Voxer Ex. 2022, p.76 of 145
Google, Inc. v. Voxer, Inc., et. al.
IPR2026-00423

The conversation, in turn, is associated with a list of participants that are

100. designated recipients of the message. EX1004, ¶0132 ("When sending a Message as part of a Conversation that is associated with a number of Contacts, all of the Contacts receive the Message."); *see also* ¶¶0038, 0041, 0257~~; EX1002, ¶100.~~. As discussed above, it would have been obvious to allow users and/or intermediate servers to elect to use a Multicast address to receive/transmit real-time video messages. ~~EX1002, ¶100.~~

101. The combination is further able to use the information for **forwarding video media of a video message, the video message initiating a multi-media conversation**. ~~EX1002, ¶101.~~ For example, Katis teaches a notification can be provided to each participant when that user's device receives a message **initiating a multi-media conversation**:

> "MCMS application 20 supports the different Voxing modes of engaging in conversations and/or managing multiple conversations using a variety of media and data types (voice, video, text, location, data, etc.). Users engage in Conversations by sending Messages to designated recipients using their Client 12 enabled Devices 13. Depending on preferences and Priorities, the recipient might Review the Message in real time, or **they might simply be notified that the Message is ready for Reviewing**.…For example, the MCMS

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> application 20 notifies a User of urgent or high priority communications from a Conversation that they are not currently Reviewing."

EX1004, ¶0107 (emphasis added); *see also* EX1004, ¶¶0038, 0268; EX1011, pp.2223 (user interface for receiving notifications). ~~EX1002, ¶101.~~ The messages in the conversation can be **multi-media**. EX1004, ¶¶0042, 0063-0064, 0107~~;~~ ~~EX1002, ¶101~~.

"[1b] using the information at the communication infrastructure for forwarding the video message by:

(i) ascertaining second participants for participation in the multimedia conversation using the information;"

102. *See* ~~claim element~~limitation [1a], immediately above. Katis teaches ascertaining second participants for participation in the multi-media conversation. EX1004, ¶¶0132, 0107, 0266, 0075, 0065, 0191. ~~EX1002, ¶102.~~ The combination infrastructure ascertains devices by their IP addresses (e.g., their own IP address and/or a Multicast IP address). EX1004, ¶¶0191, 0061, 0115, 0266; EX1005, 1:55-60, 5:30-34~~; EX1002, ¶102.~~.

"[1c] (ii) providing notifications to second client devices located on the network and associated with one or more of the second participants respectively; and"

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See limitation [1a]. Katis teaches a notification can be provided to each participant when that user's device receives a message. EX1004, ¶0107~~; EX1002,~~

103. ~~¶103~~. Second devices can also "receive a notification to join a Conversation." EX1004, ¶0266. The combination infrastructure ascertains devices by their IP addresses and provides the notification to the recipient **second client devices located on the network and associated with one or more of the second participants**. EX1004, ¶¶0191, 0061, 0115; EX1005, 1:55-60, 5:30-34~~; EX1002, ¶103.~~.

"[1d] (iii) streaming, by the communication infrastructure, at least portions of the video media of the video message to one or more of the second client devices as the video media of the video message is streamed by the first client device, received at the communication infrastructure, and stored by the communication infrastructure,"

104. In my opinion, Katis teaches portions of a **video message** can be **streamed** to **another client device** and rendered as that message is still being created, *i.e.*, the message is incomplete. ~~EX1002, ¶104.~~ This can be done, for instance, by continuously rendering a message as it is received as Vox packets.

> "The Conversation/Message management service 20f processes the transmission and receipt of Messages in a progressive fashion. **When**

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> **transmitting, Media may be created while Messages are simultaneously encoded, stored and transmitted**. In other words, **the transmission of Messages may occur simultaneously with the generation of Media by the User** (i.e., while speaking into their Device 13 or generating video). On the receiving side, the receipt, storage, and Rendering of Messages also all occur progressively. **Messages do not need to be completely received before they can be Rendered**. The Rendering of Messages may occur at the same time Messages are being delivered, right up to the MTSD. Further, the service 20 f is also capable of the simultaneous transmission of outgoing Messages and Rendering of incoming Messages. **The progressive nature of the service 20f allows a User to be engaged in a live Conversation while storing and streaming the media of the Conversation for later retrieval** and review as well other functions described herein."

EX1004, ¶¶0124, 0204-0205, 0042 (emphasis added~~); EX1002, ¶104.~~).

105. The packets are **streamed by the first client device**, **received at the communication infrastructure, and stored by the communication infrastructure,** and these actions occur **as** the communication infrastructure streams portions of the video media to the one or more second client devices. *See* analysis for claim element [1a]. EX1004, ¶¶0124, 0197, 0203-0205, 0042; *see also* EX1004, ¶¶0183 ("The packets are then continually, stored, transmitted, received, stored and rendered in

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streams (i.e., streaming media) …."); 0020, 0043, 0061, 0065, 0084, 0093, 0100, 0121, 0143, 0145, 0172, 0174, 0184~~; EX1002, ¶105.~~ In the combination, the video message is streamed to the recipient device via the Multicast address. ~~EX1002, ¶105.~~

"[1e] the streaming of the video media of the video message by the communication infrastructure enabling the one or more second client devices to render the at least portions of the video media of the video message in a real-time mode:

(a) while the video media of the video message is streamed by the first client device; and"

106. See analysis for claim element [1a] and [1d]. Video media of the video message is **streamed** to and **rendered** at a recipient **client device while the video media of the video message is streamed by the first client device in a real-time mode**. EX1004, ¶¶0174, 0124, 0019, 0204-0205, 0128. ~~EX1002, ¶106.~~ For example, Katis explains:

> "As Media the Media [sic] is received it is continuously stored. It will also be continually rendered as the Media is being received when in the near real-time mode or from storage when in the time-shifted mode."

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EX1004, ¶0205~~; EX1002, ¶106~~. In the combination, the video message is streamed to the second client devices via the Multicast address. ~~EX1002, ¶106.~~

"[1f] (b) without first setting up an end-to-end connection over the network between the first client device and any of the one or more second client devices respectively; and"

~~The~~In my opinion, the combination renders obvious element [1f]. ~~EX1002, ¶107.~~ As explained above in §~~VIII~~X.A and §~~VIII~~X.B, it would have been obvious to combine Katis with

Multicast functionality, as taught by Abbazia.~~ EX1002, ¶107.~~ Abbazia teaches that Multicast functionality avoids connections with target devices to gain efficiency. EX1005, 1:35-45, 2:4-5 ("The multicast approach eliminates the undesirable overhead associated with forming connections with each system~~…."); EX1002, ¶107.~~…."). Specifically, in Multicast, a packet is transmitted to a single Multicast IP address, and then ~~network-level~~networklevel devices, such as routers, forward it to its end destination. ~~EX1002, ¶107.~~ When the sending device sends to a Multicast address

107. (e.g. when livestreaming a video to a large audience and all users opt to use Multicast), no end-to-end connection is **set[] up between the first** (sending) **client device and any second** (recipient) **client device** before the second client devices are enabled to render the portions in a real-time mode or before the streaming

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of the video media of the video message by the communication infrastructure. ~~EX1002, ¶107.~~

"[1g] enabling the one or more second participants that have joined the multi-media conversation, during the rendering of the video media of the video message in the real-time mode, to:

(i) selectively add to the multi-media conversation one or more additional messages that are generated in response the video message; and"

108. In my opinion, Katis teaches allowing the various second participants to selectively add one or more additional messages to the multi-media conversation in response to the video message. ~~EX1002, ¶108.~~ For example, Katis states:

> "Depending on preferences and priorities, the recipient(s) might **participate** in the **conversation** in real time, or they might simply be notified that the message is ready for retrieval. In the latter case, the recipient participates in the conversation in a time-shifted mode by reviewing and **replying to the recorded message** at their convenience."

EX1004, ¶0038 (emphasis added~~); EX1002, ¶108.~~). A PHOSITA would have understood Katis to teach that users can reply to messages in both the time-shifted and real-time modes. *See, e.g.*, EX1004, ¶0039 ("Two individuals using the system can therefore send recorded voice messages back and forth to each other and review the messages when convenient, or the messages can be sent at a rate where they

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essentially merge into a live, synchronous voice conversation."), ¶0065 ("Users generally participate in a Conversation using their Devices by either Reviewing Messages in real time or in a time-shifted mode, or creating and sending Messages of a Conversation as desired."); *see also* ¶¶0063-0064, 0080-0081, 0128, 0146, 0161, 0183, 0202, 0299, 0303-0304, 0309-0311, Fig. 13A. ~~EX1002, ¶108.~~

109. Katis teaches that messages are sequentially threaded together to form a conversation, based on message attributes that specify the conversation. EX1004, ¶¶0182-0183, 0311, 0049, 0065, claim 3~~; EX1002, ¶109.~~ . *See also* EX1004, ¶0312 ("multiple Conversations, each including a string of Messages, can be conducted on a single Client 12."); ¶¶0122, 0063, 0065, 0095~~; EX1002, ¶109.~~ .

110. Users are further enabled to add responsive messages **during the rendering of the video media of the video message in the real-time mode**. ~~EX1004, ¶¶0019,~~

EX1004, ¶¶0019, 0065, 0069, 0081, 0183, 0039, 0158-0163, 0311~~; EX1002, ¶110~~. For example,

Katis states:

> "the service 20f is also capable of the simultaneous transmission of outgoing Messages and Rendering of incoming Messages. The progressive nature of the service 20f allows a User to be engaged in a live Conversation while storing and streaming the media of the

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> Conversation for later retrieval and review as well other functions described herein."

EX1004, ¶0124 (emphasis added~~); EX1002, ¶110.~~).

"[1h] (ii) render the one or more additional messages that are generated in response with the video message."

111. The additional responsive messages can be **rendered** at the same time as messages are being sent and received. EX1004, ¶¶0065, 0080-0081, 0123-0124, 0128, 0146, 0161, 0183, 0202, 0204-0205, 0299, 0303-0304, 0309-0311, Fig. 13A. ~~0128, 0146, 0161, 0183, 0202, 0204-0205, 0299, 0303-0304, 0309-0311, Fig. 13A; EX1002, ¶111.~~ For example, Katis describes:

> "Mixing: The Rendering of one or more Media streams. For example, the Media stream from two Participants of a Conversation may be Mixed when Rendered, creating a User experience similar to a conversation where multiple people are speaking at the same time."

EX1004, ¶0081~~; EX1002, ¶111.~~.

CLAIM 2

"2. The method of claim 1, wherein the adding of at least one of the one or more additional messages overlaps with the streaming of the video media of the video message by the first client device."

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112. See analysis for claim elements [1g] and [1h]. ~~EX1002, ¶112.~~ This limitation is taught or suggested by Katis. EX1004, ¶¶0065, 0080-0081, 0123-0124, ~~020402050~~0204-0205, 0042, 0128, 0146, 0161, 0183, 0202, 0299, 0303-0304, 0309-0311, Fig. 13A~~;~~ ~~EX1002, ¶112~~. For example, Katis describes:

> "Mixing: The Rendering of one or more Media streams. For example, the Media stream from two Participants of a Conversation may be Mixed when Rendered, creating a User experience similar to a conversation where multiple people are speaking at the same time."

EX1004, ¶0081~~; EX1002, ¶112~~. As another example, Katis states: "Message transmission is essentially 'full-duplex', enabling any party to send a Message at any time, even while another party is also sending a Message." EX1004, ¶0142~~;~~ ~~EX1002, ¶112.~~ .

CLAIM 3

> ***"3. The method of claim 1, further comprising enabling simultaneously rendering of: the video media of the video message in the real-time mode; and the one or more additional messages that is/are added while the video media of the video message is streamed by the first client device."***

113. See analysis for claim 2. ~~EX1002, ¶113.~~ For example, Katis states:

> "the service 20f is also capable of the simultaneous transmission of outgoing Messages and Rendering of incoming Messages. The progressive nature of the service 20f allows a User to be engaged in

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> a live Conversation while storing and streaming the media of the Conversation for later retrieval and review as well other functions described herein."

EX1004, ¶¶0124, 0311, 0309-0310; *see also* ¶¶0205, 0208, 0041, 0045, 0065, 0067, 0100, 0135, claim 7~~; EX1002, ¶113.~~.

CLAIM 4

> ***"4. The method of claim 1, further comprising enabling simultaneously rendering of: the video media of the video message in a time-shifted mode; and the one or more additional messages added to the multimedia conversation."***

114. See analysis for claims 2 and 3.~~ EX1002, ¶114.~~ For example, Katis states:

> "As Media the Media is received it is continuously stored. It will also be continually rendered as the Media is being received when in the near real-time mode or from storage when in the time-shifted mode."

EX1004, ¶0205, claim 6 ("rendering on the first communication device the persistently stored received media in a time-shifted mode"), ¶0065, ¶0045 ("enabling users to review the messages of conversations in either a live mode or a time-shifted mode~~"); EX1002, ¶114."~~). See also analysis for claim element [1e].

~~EX1002, ¶114.~~

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CLAIM 5

"5. The method of claim 1, wherein the adding of at least one of the one or more additional messages occurs after the streaming of the video media of the video message by the first client device is complete."

115. See analysis for claims 2-4. ~~EX1002, ¶115.~~ Katis states:

> "Depending on preferences and priorities, the recipient(s) might **participate** in the **conversation** in real time, or they might simply be notified that the message is ready for retrieval. In the latter case, the recipient participates in the conversation in a time-shifted mode by reviewing and **replying to the recorded message** at their convenience."

EX1004, ¶0038 (emphasis added); ~~EX1002, ¶115. See~~*see also* EX1004, ¶0065 ("Users generally participate in a Conversation using their Devices by either Reviewing Messages in real time or in a time-shifted mode, or creating and sending Messages of a Conversation as desired."); ¶¶0080-0081, 0128, 0146, 0161, 0183, 0202, 0299, 0303-0304, 0309-0311, Fig. 13A~~; EX1002, ¶115.~~ .

CLAIM 6

"6. The method of claim 1, further comprising enabling adding to the one or more additional messages during or after any of: (c) the streaming of the video media of the video message by the first client device; (d) the rendering of the video media of the video message in

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the real-time; or (e) the rendering of the video media of the video message in a time-shifted mode."

116. See analysis for claims 2-5. ~~EX1002, ¶116.~~

CLAIM 7

"7. The method of claim 1, wherein the one or more additional

messages are organized and listed in a time-order in which the one or more additional messages is/are added to the multi-media conversation respectively."

117. See analysis for claim elements [1g] and [1h]. ~~EX1002, ¶117.~~ This limitation is taught or suggested by Katis. EX1004, ¶¶0019, 0063, 0149, 0183, 0246, 0291, 0294, 0293,

0295-0297, 0302, 0309, 0311, Fig. 13A, claim 2~~; EX1002, ¶117.~~. For example, Katis teaches that

"[b]y rendering the media in the sequence order, the Messages of the set of Conversations are consecutively rendered" and that "the User has the option of reviewing just the incoming Messages associated with the Conversation, or both the incoming Messages as well as the Media created by the first User associated with the Conversation in time index order." EX1004, ¶¶0291,

0297~~; EX1002, ¶117.~~.

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CLAIM 8

"8. The method of claim 1, wherein the one or more additional messages selectively include one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data."

~~This~~118. In my opinion, this limitation is taught or suggested by Katis. EX1004, ¶¶0038, 0042, 0080, 0063-0064, 0085, 0107, 0155, 0183~~; EX1002, ¶118~~. For example, Katis states that

"MCMS application 20 supports the different Voxing modes of engaging in conversations and/or managing multiple conversations using a variety of media and data types (voice, video, text, location, data, etc.)." EX1004, ¶0107~~; EX1002, ¶118.~~.

CLAIM 9

"9. The method of claim 1, further comprising configuring the communication infrastructure to ascertain IP address(es) for the one or more second client devices respectively."

119. The combination infrastructure ascertains devices by their IP addresses and provides the notification to the second users. EX1004, ¶¶0191, 0061, 0115; EX1005, 1:55-60, 5:30-34; ~~EX1002, ¶~~*see* ~~119.~~ ~~*See*~~ *also* EX1004, ¶¶0073, 0179, 0185, 0190, 0191, 0132, ~~0190, 0191, 0132, 0105; EX1002, ¶119.~~0105. For example, Katis states:

> "The address of a target Client 12 needs to be known so that the underlying network delivers the Vox packet 95 to the correct location. With IPv4 networks, the address is typically an IPv4

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> Address, which is a 32-bit number that uniquely identifies a host within the network. For other networking technologies, the address could be some other type of identifier. IP networks use the Domain Name System (DNS) to resolve human-readable names into IP addresses, and the Address Resolution Protocol (ARP) to resolve IP addresses into physical addresses. Regardless of the underlying networking technology, the system 10 uses one of the above mentioned or other known addressing schemes for delivery of Vox packets 95 to the correct location."

EX1004, ¶0191~~; EX1002, ¶119.~~ .

CLAIM 10

> ***"10. The method of claim 1, further comprising: enabling the initiating participant to initiate multiple multi-media conversations by creating and disseminating multiple video messages, each of which may be selectively rendered in the real-time mode, and each having one or more additional messages associated therewith; and enabling the initiating participant to selectively switch participation among the multiple multi-media conversations."***

120. See analysis for claims 2-5.~~ EX1002, ¶120.~~ Katis further teaches that a user can **initiate**, **participate** in, and **switch** between **multiple** conversations. EX1004, ¶0311 ("In this manner, multiple Conversations, each including a string of Messages, can be conducted on a single Client 12 enabled Device 13"); ¶0157 ("The User may switch the current conversation among the aggregate conversation list from time-totime.); ¶¶0038-0039, 0307, 0067~~; EX1002, ¶120.~~ .

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CLAIM 11

"11. The method of claim 1, further comprising enabling the multimedia conversation to be searchable using one or more tags."

~~This~~121. In my opinion, this limitation is taught or suggested by Katis. EX1004, ¶¶0043, 0063, 0071, 0176, 0256~~; EX1002, ¶121.~~ For example, Katis offers the following definition of "tags" : "Tags: a set of attributes a User or the system may assign to a Conversation or a message, such as a topic (a company name), a directive ("action items"), a indicator ("conversation summary"), or any other label by which one might want to search or organize the data." EX1004, ¶0071~~; EX1002, ¶121.~~ .

CLAIM 12

"12. The method of claim 1, further comprising transcoding the video media of the video message from one encoding format as streamed by the first client device to one or more second encoding format(s) suitable for rendering on the one or more second client devices respectively."

~~It~~In my opinion, it would have been obvious to perform this function as suggested by Katis.

122. EX1004, ¶¶0119, 0139, 0059, 0085, 0074, 0082, 0139, 0061, 0102, 0221-0222, Fig. 9C~~; EX1002, ¶122~~. For example, Katis defines encoding as:

"Encoding: The process of translating Media either created by a User (such as voice or video) or otherwise originating on a Device (such

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as GPS or other sensor data), and converting the media into digital data to be processed by a Client."

EX1004, ¶0082. Katis states that "[s]ervers provide . . . transcoding . . . and the optimization of the transmission of data across the network." EX1004, ¶0061. Katis further states that "different Codec or Codecs, each having a different bit rate versus quality tradeoff, may be used." EX1004, ¶0221~~; EX1002, ¶122~~. Katis states that "the rendering and encoding module 21 is responsible for performing all rendering tasks for the MCMS application 20. These tasks include rendering Media appropriately for the device 13 running application 12." EX1004, ¶¶0128, 0139, 0161~~; EX1002, ¶122.~~ .

~~It~~In my opinion, it would have been obvious to also do this in the combination, especially when

123. it is known that the encoding of the sending device for real-time video does not match the encoding of the recipients, or where network conditions generally prescribe a lower use of bandwidth. ~~EX1002, ¶123.~~ For example, Katis states that "[w]hen insufficient underlying network resources are available, the quality of the transmitted Media streams can be degraded." EX1004, ¶0143~~; EX1002, ¶123~~. Katis states that ~~"current bandwidth conditions" are taken into account. EX1004, ¶0055;~~ "current bandwidth conditions" are taken into account. ~~EX1002, ¶123.~~EX1004, ¶0055.

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CLAIM 13

"13. The method of claim 1, further comprising selectively degrading a quality level of the video media of the video message when streaming the video media of the video message along a delivery route over the network to a select second client device, the quality level of the video media degraded commensurate with an ascertained bandwidth along the delivery route over the network."

124.~~This~~ In my opinion, this limitation is taught or suggested by Katis. EX1004, ¶¶0041, 0043, 0055, 0143, 0145, 0207, 0218, 0221-0223, 0228, 0236, Fig. 9C~~; EX1002, ¶124.~~ For example, Katis states that "[w]hen insufficient underlying network resources are available, the quality of the transmitted Media streams can be degraded." EX1004, ¶0143~~; EX1002, ¶124~~. Katis states that "current bandwidth conditions" are taken into account. ~~EX1004, ¶0055; EX1002, ¶124. See claim 12 analysis. EX1002,~~

EX1004, ¶0055. See claim 12 analysis. ~~¶124.~~

CLAIM 14

"14. The method of claim 1, further comprising providing two or more rendering options for rendering the video media of the video message, the two or more rendering options including: play; play fast; play slow; jump back; jump forward; jump to start; jump to head; rewind; pause; and play again."

125.~~This~~ In my opinion, this limitation is taught or suggested by Katis. EX1004,

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¶¶0040, 0043, 0093, 0099, 0125, 0128, 0145-0146, 0272, 0274-0278, claim 8~~;~~ ~~EX1002, ¶.125.~~ For example, claim 8 of Katis recites: "providing a plurality of rendering options for rendering the stored media in the time-shifted mode, the rendering options including one or more of the following: pause, replay, play faster, play slower, jump backward, jump forward, catch up to the most recently received media, or jump to the most recently received media." EX1004, claim 8~~; EX1002, ¶125.~~.

CLAIM 15

"15. The method of claim 1, further comprising assigning one or more attributes to the multi-media conversation, the one or more attributes including: (c) a name for the multi-media conversation; (d) a name for the initiating participant; (e) a name or names for the initiating participant or any of the second participant(s) that have added to the one or more additional messages respectively; or (f) a date or time for the video message and each of the one or more additional messages added to the multimedia conversation respectively."

126.~~This~~ In my opinion, this limitation is taught or suggested by Katis. ~~EX1002, ¶126.~~ For example, Katis states that "each Conversation is defined by a set of attributes, including a name, a list of Participants, begin and end time, and state . . . ." ~~EX1004,~~ EX1004~~¶¶0247; 0065; *see also* EX1004, ¶¶0256-0257, 0285, 0241-0242, 0063, 0038, 0040, 0041~~,

¶¶0247; 0065; *see also* EX1004, ¶¶0256-0257, 0285, 0241-0242, 0063, 0038, 0040,

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0041, 0132. ~~EX1002, ¶126.~~

CLAIM 16

"16. The method of claim 1, wherein the streaming of the video media of the video message further comprises: segmenting the video media of the video message into a sequence of segments, the segments each including a payload; adaptively adjusting a number of bits representing the video media of the video message contained in the payloads of the segments, the number of bits adaptively adjusted based on an ascertained bandwidth over a network connection; and streaming the sequence of segments, with the adaptively adjusted number of bits contained in the payloads, over the network connection."

~~This~~127. In my opinion, this limitation is taught or suggested by Katis. EX1004, ¶¶0155, 0157, 0181, 0183, 0311, 0163, 0165, 0207, 0213, 0041, 0084, 0143, 0159, 0196-0197, 0199, 0221~~; EX1002, ¶127.~~ For example, Katis states that "the Media is segmented and placed into the payloads of a plurality of Vox packets 95." EX1004, ¶0183. Katis also describes a Packet Quality Manager (PQM) that dynamically adjusts a Maximum Available Bit Rate (MABR) based on network bandwidth. ~~EX1004, ¶¶0163, 0165, 0207, 0213, 0084, 0159, 0041; EX1002, ¶127. The PQM is used when the Persistent Infinite Message Buffer (PIMB) reader reads data from the~~EX1004, ¶¶0163, 0165, 0207, 0213, 0084, 0159, 0041. The PQM is used when the Persistent Infinite Message Buffer (PIMB) reader reads data from the PIMB and creates Vox packets for transmission. EX1004, ¶¶0084, 0196, 0197, 0199, 0163, 0221, 0118, 0183~~; EX1002, ¶127.~~. See analysis for claim 12. ~~EX1002,~~

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~~¶127.~~

CLAIM 17

"17. The method of claim 1, further comprising: transcoding the video media of the video message; and streaming the video media of the video message to the one or more second client devices as originally encoded or as transcoded as needed for rendering on the one or more second client devices respectively."

128. See analysis for claim 12. ~~EX1002, ¶128.~~

CLAIM 18

"18. The method of claim 1, further comprising adaptively adjusting as needed a number of bits contained in video media payloads used to stream the video media of the video message by the communication infrastructure to the one or more second client devices respectively, the adaptive adjustment based on bandwidth conditions over network connection(s) between the communication infrastructure and the one or more second client devices respectively."

129. See analysis for claim 16. ~~EX1002, ¶129.~~

CLAIM 19

"19. The method of claim 1, further comprising segmenting the video message into a plurality of indexed media payloads, the plurality of indexed media payloads associated by a message identifier and sequentially numbered so that the plurality of indexed media payloads can be rendered in the sequentially numbered order."

130. See analysis for claim 16 (segmenting). ~~EX1002, ¶130.~~ This limitation is taught or suggested by Katis. EX1004, ¶¶0019, 0038, 0040, 0041, 0065, 0132,

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~~0148-0149, 0155, 0180-0183, 0193, 0246, 0291, 0294, 0293, 0295-0297, 0302, 0309,~~ 0311, Fig. 13A, 8B, 4C, 4D, claim 2, claim 19~~; EX1002, ¶130.~~. For example, Katis states that

"hardware 34 receives the raw audio and/or video signals and provides them to the Encoder Receiver 28a, which encodes the signals into indexed media payloads." EX1004, ¶0155~~; EX1002, ¶130.~~ Katis also states that Vox packets include a "message ID field." EX1004, ¶¶0180-0181~~; EX1002, ¶130~~. Katis states that "each packet 95 is indexed, time-stamped, and given a sequence identifier." EX1004, ¶¶0183, 0311~~; EX1002, ¶130.~~ Katis further states:

"[T]he available indexed media payloads are arranged into a sequence order (step 1216). The indexed media payloads are then continuously rendered in the sequence order (step 1218)."

EX1004, ¶¶0294, 0291, 0205, 0157~~; EX1002, ¶130~~.

CLAIM 20

"20. The method of claim 1, further comprising enabling the initiating participant to initiate multiple conversations with multiple video messages at designated times or fixed time intervals respectively."

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131. See analysis for claim 10 (initiation of conversations). ~~EX1002, ¶131.~~ Katis states that conversations can be started at a "designated time" or "at a fixed time."

EX1004,

¶¶0257, 0241, 0245-0246, 0267. ~~EX1002, ¶131.~~

CLAIM 21

"21. The method of claim 1, wherein the information is indicative that the video message is a broadcast, and in response, the communication infrastructure uses the information to ascertain at least some of the second participants for broadcasting the video message."

132. ~~This~~ In my opinion, this limitation is taught or suggested by Katis. EX1004, ¶¶0107, 0063, 0065, 0072, 0132, 0135, 0246-0247, 0250, 0257, 0287, 0089-0090~~; EX1002, ¶132.~~ For example, Katis states that "[w]hen new Messages are created, they either define a new Conversation, or they are added to an existing Conversation" and that "each

Conversation is defined by a set of attributes, including . . . a list of Participants." EX1004, ¶¶0065, 0247~~; EX1002, ¶132.~~ As an example, Katis states that "[a] User creates a ~~Conversation through the interface 110 by inputting a . . . a list of Contacts,~~ Conversation through the interface 110 by inputting a . ~~. . .~~". . a list of Contacts, ..." EX1004, ¶0257~~; EX1002, ¶132.~~ Katis also incorporates by reference U.S. Provisional Application

No. 60/999,619, (¶0001), which references a "broadcast" at pages 13 and 23.

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EX1011, pp. 13, 23(xii~~); EX1002, ¶132.~~). A user may, for example, designate a message using an "urgent" Importance tag. EX1004, ¶¶0072, 0250~~; EX1002, ¶132.~~. In the combination, the video message is provided to the second participants via the Multicast address. ~~EX1002, ¶132.~~

CLAIM 22

"22. The method of claim 1, further comprising enabling the one or more second participants to be in an application running on their associated second client devices when notified of the video message."

133. In my opinion, Katis teaches or suggests this claim element. ~~EX1002, ¶133.~~ For example, Katis defines a "Client" as: "Client: A Client is the user application in the communication system, which includes . . . 'Voxing functionality.' Users interact with the Client application, and the Client application manages all communications . . . ." EX1004, ¶¶0059, 0060, 0101, 0121, Fig. 14A~~; EX1002, ¶133.~~. Katis teaches a notification can be provided to each participant when that user's device receives a message. EX1004, ¶¶0107, 0038, 0268, 0137~~; EX1002, ¶133.~~. The combination infrastructure ascertains devices by their IP addresses and provides the notification to the second client devices. EX1004, ¶¶0191, 0061, 0115; EX1005, 1:55-60, 5:30-34~~; EX1002, ¶133.~~.

Google/Voxer Ex. 2022, p.100 of 145
Google, Inc. v. Voxer, Inc., et. al.
IPR2026-00423

CLAIM 23

"23. The method of claim 1, further comprising: providing a user interface for the first client device and the one or more second client devices respectively; and enabling the initiating participant, and the one or more second participants, to initiate and selectively participate in the multi-media conversation through the user interface provided on the first client device and the one or more second client devices respectively."

134. In my opinion, Katis teaches or suggests this claim element. EX1004, ¶¶0059 ("A Client is the user application in the communication system, which includes a user interface . . . ."), 0065, 0101, 0107, 0239, 0251, 0266~~; EX1002, ¶ 134.~~ For example, ~~Katis explains:~~

Katis explains:

> "Create a Conversation 1104 b—A User creates a Conversation through the interface 110 by inputting a Conversation name, a list of Contacts, and an optional scheduled start time. If no start time is designated, it is assumed the start time is immediate. In response, the MCMS application 20 creates a new Conversation in the database 22, associating records for each Participant on the Contacts list."

EX1004, ¶0257~~; EX1002, ¶134~~. "Users engage in Conversations by sending Messages to designated recipients using their Client 12 enabled Devices 13."

EX1004, ¶0107~~; EX1002, ¶134~~.

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CLAIM 24

"24. The method of claim 1, further comprising distributing an application defining a user interface that enables the users of the multi-media messaging service to selectively initiate and/or participate in a plurality of multi-media conversations, each including at least one video message, that can be rendered in the real-time mode."

135. See analysis for claims 10, 22, and 23. ~~EX1002, ¶135.~~

CLAIM 25

"25. The method of claim 1, further comprising selectively serving the video media of the video message, and the one or more additional messages, from the one or more storage locations to one of (i) the first client device, (ii) any of the one or more second client devices, or both (i) and (ii)."

136. ~~This~~ In my opinion, this limitation is taught or suggested by Katis. EX1004, ¶¶0020, 0041, 0043, 0045, 0061, 0065, 0067, 0084, 0093, 0100, 0121, 0127, 0143, 0145, 0172, 0174, 0184, 0204-0205, claim 6, claim 7~~; EX1002, ¶136.~~ For example, Katis states that that "the media payloads generated by a Client 12 are stored in multiple locations" (including sending device 13, intermediate server(s) 16, and receiving device 13), and claim 6 of Katis recites: "rendering on the first communication device the persistently stored received media in a time-shifted mode." EX1004, ¶0184, claim 6~~; EX1002, ¶136.~~ Claim 7 of Katis also recites "selectively transitioning on the first communication device the rendering of the received media between the substantially near real-time mode and a time-

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shifted mode." EX1004, claim 7~~; EX1002, ¶136.~~. In the combination, the video message is provided to the second devices via the Multicast address. ~~EX1002, ¶136.~~

CLAIM 26

"26. The method of claim 1, wherein the video media of the video message is made available by the communication infrastructure to the one or more second client devices for rendering either in (i) the real-time mode or (ii) out of one or more storage locations in a timeshifted mode."

137. See analysis for claim 1 (real-time mode) and 4 (time-shifted mode). ~~EX1002, ¶137.~~ This limitation is taught or suggested by Katis. EX1004, ¶¶0020, 0043, 0051, 0061, 0065, 0084, 0093-0094, 0100, 0121, 0143, 0145, 0172, 0174, 0184, 0204, claim 6, claim 7~~; EX1002, ¶137.~~. For example, Katis states that that "the media payloads generated by a Client 12 are stored in multiple locations" (including sending device 13, intermediate server(s) 16, and receiving device 13), and claim 6 of Katis recites: "rendering on the first communication device the persistently stored received media in a ~~time-shifted~~timeshifted mode." EX1004, ¶0184, claim 6~~; EX1002, ¶137.~~. Claim 7 of Katis also recites "selectively transitioning on the first communication device the rendering of the received media between the substantially near real-time

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mode and a time-shifted mode." EX1004, claim 7~~; EX1002, ¶137~~. See also analysis for claim element [1e]. ~~EX1002, ¶137.~~

CLAIM 27

"27. The method of claim 1, wherein the video message is a broadcast."

138. See analysis for claim 21. ~~EX1002, ¶138.~~ This limitation is taught or suggested by Katis. EX1004, ¶¶0107, 0063, 0065, 0072, 0132, 0135, 0246-0247, 0250, 0257, ~~0287, 0089-0090, EX1002, ¶138. Katis also incorporates by reference~~ 0287, 0089-0090. Katis also incorporates by reference U.S. Provisional Application No. 60/999,619, (¶0001), which references a "broadcast" at pages 13 and 23. EX1011, pp. 13, 23(xii~~); EX1002, ¶138.~~). A user may, for example, designate a message using an "urgent" Importance tag. EX1004, ¶¶0072, 0250~~; EX1002, ¶138.~~ .

CLAIM 28

"28. The method of claim 1, further comprising: providing the initiating participant an ability for selectively designating the information for the video message as one of a broadcast, for an identified user, for identified multiple users, for a defined group of users, or for a channel; and configuring the communication infrastructure to ascertain the second participants, using the information, at least partially in compliance with the selected designation."

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139. See analysis for claim 21. ~~EX1002, ¶139.~~ This limitation is taught or suggested by Katis. EX1004, ¶¶0107, 0063, 0065, 0072, 0132, 0135, 0246-0247, 0250, 0257, 0287, 0089-0090~~, EX1002, ¶139.~~. For example, Katis states that "[w]hen new Messages are created, they either define a new Conversation, or they are added to an existing Conversation" and that "each Conversation is defined by a set of attributes, including

. . . a list of Participants." EX1004, ¶¶0065, 0247~~; EX1002, ¶139~~. As an example, Katis states that "[a] User creates a Conversation through the interface 110 by inputting a . . . a list of Contacts, ..." EX1004, ¶0257 ~~EX1002, ¶139.~~. Katis also states: "Create a Group of Contacts

1112 g—This function enables a User to associate a number of Contacts into a Group" and that "[a] typical Conversation includes a set of Messages that are organized around a defined subject matter, topic, time, Group or Channel. For example, Conversations may involve a common Group of people . . . ." EX1004, ~~¶¶0287, 0246, 0089, 0040;~~

~~EX1002, ¶139.~~¶¶0287, 0246, 0089, 0040. Katis also incorporates by reference U.S. Provisional

Application

No. 60/999,619, (¶0001), which references a "broadcast" at pages 13 and 23. EX1011, pp. 13~~,~~ and 23~~; EX1002, ¶139.~~(xii). A user may, for example, designate a

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message using an "urgent" Importance tag. EX1004, ¶¶0072, 0250~~; EX1002, ¶139.~~

In the combination, the video message is provided to the second participants via the Multicast address.

~~Multicast address. EX1002, ¶139.~~

CLAIM 29

"29. The method of claim 1, further comprising: providing the initiating participant an ability for designating the video message as a broadcast; and in response to the designation, configuring the communication infrastructure to broadcast the video message to at least some of the second participants." 140.

See analysis for claim 28. ~~EX1002, ¶140.~~

CLAIM 30

"30. The method of claim 1, wherein the video message is broadcast to the second participants that positively respond to the notification respectively."

141. See analysis for claim element [1c] and claims 21 and 28. ~~EX1002, ¶141.~~

Katis teaches or suggests this element. EX1004, ¶¶0268, 0137, 0266, 0017, 0248, 0208~~; EX1002, ¶141~~. For example, Katis states: "individuals on a Conference or tactical call may be notified that their attention is immediately needed on the call. This indication may convey multiple levels of urgency and an acknowledgement of some kind by the recipient."

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EX1004, ¶0137~~; EX1002, ¶141.~~.

CLAIM 31

"31. The method of claim 1, wherein the information identifies one or more users of the communication infrastructure as defined by the initiating participant."

142. See analysis for claim element [1b]. ~~EX1002, ¶142.~~ Information identifying recipient client users is provided by a first user. ~~EX1002, ¶142.~~ For example, Katis explains:

> "**Create a Conversation 1104 b**—A User creates a Conversation through the interface 110 by inputting a Conversation name, **a list of Contacts**, and an optional scheduled start time. If no start time is designated, it is assumed the start time is immediate. In response, the MCMS application 20 creates a new Conversation in the database 22, **associating records for each Participant on the Contacts list**."

EX1004, ¶¶0257, 0038, 0041, 0257~~; EX1002, ¶142.~~.

CLAIM 32

"32. The method of claim 1, wherein the information is useful for ascertaining a group of users of the communication infrastructure associated with the initiating participant."

143. See analysis for claim 31. ~~EX1002, ¶143.~~ For example, Katis also states: "Create a Group of Contacts 1112 g—This function enables a User to associate a number of Contacts into a Group" and that "[a] typical Conversation includes a set

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of Messages that are organized around a defined subject matter, topic, time, Group or Channel. For example, Conversations may involve a common Group of people . . . ." EX1004, ~~. . ." EX1004,~~ ¶¶0287, 0246, 0089, 0040~~; EX1002, ¶143~~.

CLAIM 33

"33. The method of claim 1, wherein the information is useful for ascertaining a channel having one or more users of the communication infrastructure associated therewith."

144. See analysis for claims 31 and 32. ~~EX1002, ¶144.~~ For example, Katis also states: "Channel: Typically used for tactical communication systems. A Channel is similar to a Group in that it associates multiple Contacts with the Channel." EX1004, ~~EX1004,~~ ¶¶0090, 0246, 0125~~; EX1002, ¶144~~.

CLAIM 34

"34. The method of claim 1, wherein the information is indicative that the video message is a broadcast." 145.

See analysis for claim 21. ~~EX1002, ¶145.~~

CLAIM 35

"35[Pre]. A method comprising: maintaining a messaging infrastructure on a network;"

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146. See analysis for claim element [1Pre]. ~~EX1002, ¶146.~~ The combination similarly provides a **messaging infrastructure**. ~~EX1002, ¶146.~~

"[35a] receiving, at the messaging infrastructure, information from a first device used by an initiating participant, the information usable by the messaging infrastructure for forwarding video media of a video message, the video message initiating a conversation,"

147. See analysis for claim element [1a]. ~~EX1002, ¶147.~~

"[35b] using the information at the messaging infrastructure for forwarding the video message by:

(i) ascertaining second participants for participation in the conversation using the information; and"

148. See analysis for claim element [1b]. ~~EX1002, ¶148.~~

"[35c] (ii) streaming, by the messaging infrastructure, at least portions of the video media of the video message to one or more second devices associated with at least some of the ascertained second participants, the streaming to the one or more second devices occurring as the video media of the video message is streamed by the first device, received at the messaging infrastructure, and stored by the messaging infrastructure,"

149. See analysis for claim element [1d]. ~~EX1002, ¶149.~~

"[35d] the streaming of the video media of the video message by the messaging infrastructure enabling the one or more second devices to render the at least portions of the video media of the video message in a real-time mode:

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(a) while the video media of the video message is streamed by the first device; and"

150. See analysis for claim element [1e]. ~~EX1002, ¶150.~~

"[35e] (b) without first setting up an end-to-end connection over the network between the first device and any of the one or more second devices respectively; and"

151. See analysis for claim element [1f]. ~~EX1002, ¶151.~~

"[35f] enabling one or more second participants that have joined the conversation to:

(i) selectively add to the conversation one or more additional messages; and"

152. See analysis for claim element [1g]. ~~EX1002, ¶152.~~

"[35g] (ii) render the one or more additional messages."

153. See analysis for claim element [1h]. ~~EX1002, ¶153.~~

CLAIM 36

"36. The method of claim 35, wherein the adding of at least one of the one or more additional messages overlaps with the streaming of the video media of the video message by the first client device."

154. See analysis for claim 2. ~~EX1002, ¶154.~~

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CLAIM 37

"37. The method of claim 35, further comprising enabling simultaneously rendering of: the video media of the video message in the real-time mode; and the one or more additional messages that is/are added while the video media of the video message is being rendered in the real-time mode."

155. See analysis for elements [1g] and [1h] and claims 2 and 3. ~~EX1002, ¶ 155.~~

CLAIM 38

"38. The method of claim 35, wherein the adding or rendering of at least one of the one or more additional messages occurs after the streaming of the video media of the video message by the first device is complete."

156. See analysis for claim 5. ~~EX1002, ¶156.~~

CLAIM 39

"39. The method of claim 35, further comprising organizing the one or more additional messages in a time-order, the one or more additional messages including one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data."

157. See analysis for claims 7 and 8. ~~EX1002, ¶ 157.~~

CLAIM 40

"40. The method of claim 35, further comprising transcoding the video media of the video message from one encoding format as streamed by the first device to one or more second encoding format(s) as needed for rendering on the one or more second device(s) respectively."

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158. See analysis for claim 12. ~~EX1002, ¶ 158.~~

CLAIM 41

"41. The method of claim 35, further comprising selectively degrading quality level(s) of the video media of the video message when streaming the video media of the video message along one or more delivery route(s) over the network to one or more select second device(s) respectively."

159. See analysis for claim 13. ~~EX1002, ¶ 159.~~

CLAIM 42

"42. The method of claim 35, further comprising adaptively adjusting a number of bits contained in video media payloads used to stream the video media of the video message by the messaging infrastructure to the one or more second device(s) respectively."

160. See analysis for claim 18. ~~EX1002, ¶ 160.~~

CLAIM 43

"43. The method of claim 35, wherein the information is indicative that the video message is a broadcast, and in response, the messaging infrastructure uses the information to ascertain at least some of the second participants for broadcasting the video message."

161. See analysis for claim 21. ~~EX1002, ¶161.~~

CLAIM 44

"44. The method of claim 35, further comprising notifying at least some of the second participants of the video message."

162. See analysis for claim element [1c]. ~~EX1002, ¶ 162.~~

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CLAIM 45

"45. The method of claim 35, further comprising configuring the messaging infrastructure to selectively serve from storage to the first device for rendering in a time-shifted mode one of: (i) the video media of the video message; (ii) the one or more additional messages; or (iii) both (i) and (ii)."

163. See analysis for claims 25 and 26. ~~EX1002, ¶ 163.~~

CLAIM 46

"46. The method of claim 35, further comprising configuring the messaging infrastructure to selectively serve from storage to any of the one or more second devices one of: (i) the video media of the video message; (ii) the one or more additional messages; or (iii) both (i) and (ii)."

164. See analysis for claims 25 and 26. ~~EX1002, ¶164.~~

CLAIM 47

"47. The method of claim 35, wherein the video message is a broadcast."

165. See analysis for claim 27. ~~EX1002, ¶165.~~

CLAIM 48

"48. The method of claim 35, wherein the information is useful for ascertaining a group of users for participation in the conversation, the group of users associated with the initiating participant."

166. See analysis for claims 31, 32, and elements 49[a-d]. ~~EX1002, ¶166.~~

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CLAIM 49

"49[Pre]. A method comprising: maintaining a messaging infrastructure on a network;"

167. See analysis for claim element 35[Pre]. ~~EX1002, ¶167.~~

"[49a] receiving, at the messaging infrastructure, information from a first device used by an initiating user, the information usable by the messaging infrastructure for forwarding video media of a video message to a group of users of the messaging infrastructure,"

168. See analysis for claim element [35a] and claims 28 and 32. ~~EX1002, ¶168.~~

"[49b] the group of users associated with the initiating user,"

169. See analysis for claims 28 and 32. ~~EX1002, ¶169.~~

"[49c] the video message initiating a conversation between the initiating user and the group of users;"

170. See analysis for claim element [35a] and claims 28 and 32. ~~EX1002, ¶170.~~

"[49d] forwarding, by the messaging infrastructure, the video message to at least some of the group of users by:

(i) using the information to ascertain the group of users and to locate second devices on the network associated with at least some of the group of users; and"

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See analysis for claim elements [35b] and [35c] and claims 28 and 32.

171. ~~EX1002, ¶171.~~

"[49e] (ii) streaming, by the messaging infrastructure, at least portions of the video media of the video message to one or more of the second devices, the streaming to the one or more second devices occurring as the video media of the video message is streamed by the first device, received at the messaging infrastructure, and stored by the messaging infrastructure,"

172. See analysis for claim element [35c]. ~~EX1002, ¶172.~~

"[49f] the streaming of the video media of the video message by the messaging infrastructure enabling the one or more second devices to render the at least portions of the video media of the video message in a real-time mode:

(a) while the video media of the video message is streamed by the first device; and"

173. See analysis for claim element [35d]. ~~EX1002, ¶173.~~

"[49g] (b) without first setting up an end-to-end connection over the network between the first device and any of the one or more second devices respectively; and"

174. See analysis for claim element [35e]. ~~EX1002, ¶174.~~

"[49h] enabling one or more of the group of users that have joined the conversation to selectively add to the conversation one or more

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additional messages or render the one or more additional messages."

175. See analysis for claim element [35f] and [35g] and claims 28 and 32. ~~EX1002,~~

~~¶175.~~

CLAIM 50

"50. The method of claim 49, wherein the adding or rendering of at least one of the one or more additional messages occurs during the streaming of the video media of the video message by the first device."

176. See analysis for elements [1e], 1[g], and [1h] and claims 2 and 3. ~~EX1002,~~

~~¶176.~~

CLAIM 51

"51. The method of claim 49, wherein the adding or rendering of at least one of the one or more additional messages occurs after the streaming of the video media of the video message by the first device is complete."

177. See analysis for claim 5. ~~EX1002, ¶ 177.~~

CLAIM 52

"52. The method of claim 49, further comprising transcoding the video media of the video message from one encoding format as streamed by the first device to one or more second encoding format(s) as needed for rendering on the one or more second device(s) respectively."

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178. See analysis for claim 12. ~~EX1002, ¶ 178.~~

CLAIM 53

"53. The method of claim 49, further comprising selectively degrading quality level(s) of the video media of the video message when streaming the video media of the video message from the messaging infrastructure along one or more delivery route(s) over the network to one or more select second device(s) respectively."

179. See analysis for claim 13 and element [49e]. ~~EX1002, ¶ 179.~~

CLAIM 54

"54. The method of claim 49, further comprising adaptively adjusting a number of bits contained in video media payloads used to stream the video media of the video message by the messaging infrastructure to the one or more second devices, respectively."

180. See analysis for claim 18. ~~EX1002, ¶ 180.~~

CLAIM 55

"55. The method of claim 49, wherein the information is indicative that the video message is a broadcast, and in response, the messaging infrastructure broadcasts the video message to one or more among the group of users associated with the initiating user."

181. See analysis for claims 21, 28, and 32. ~~EX1002, ¶ 181.~~

CLAIM 56

"56. The method of claim 49, further comprising notifying the group of users of the video message."

182. See analysis for claim element [1c] and claims 28 and 32. ~~EX1002, ¶ 182.~~

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CLAIM 57

"57. The method of claim 49, further comprising organizing the one or more additional messages in a time-order, the one or more additional messages including one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data."

183. See analysis for claims 7 and 8. ~~EX1002, ¶183.~~

CLAIM 58

"58[Pre]. A method comprising: maintaining a messaging infrastructure on a network;"

184. See analysis for claim element 35[Pre]. ~~EX1002, ¶184.~~

"[58a] receiving, at the messaging infrastructure, information from a first device used by an initiating user, the information usable by the messaging infrastructure for forwarding video media of a video message broadcast, the video message broadcast initiating a conversation between the initiating user and second users of the messaging infrastructure;"

185. See analysis for claim element [35a] and claims 21 and 28. ~~EX1002, ¶185.~~

"[58b] forwarding, by the messaging infrastructure, the video message broadcast by:

(i) using the information to ascertain the second users and to locate second devices on the network associated with at least some of the second users; and"

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186. See analysis for claim element [35b] and claims 21 and 28. ~~EX1002, ¶186.~~

"[58c] (ii) streaming, by the messaging infrastructure, at least portions of the video media of the video message broadcast to one or more of the second devices, the streaming to the one or more second devices occurring as the video media of the video message broadcast is received by the messaging infrastructure from the first device and stored by the messaging infrastructure,"

187. See analysis for claim element [35c] and claims 21 and 28. ~~EX1002, ¶187.~~

"[58d] the streaming of the video media of the video message broadcast by the messaging infrastructure enabling the one or more second devices to render the at least portions of the video media of the video message broadcast in a real-time mode:

(a) while the video media of the video message broadcast is streamed by the first device; and"

188. See analysis for claim element [35d] and claims 21 and 28. ~~EX1002, ¶188.~~

"[58e] (b) without first setting up an end-to-end connection over the network between the first device and any of the one or more second devices respectively; and"

189. See analysis for claim element [35e]. ~~EX1002, ¶189.~~

"[58f] enabling one or more of the second users that have joined the conversation to selectively add to the conversation one or more

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additional messages or render the one or more additional messages."

190. See analysis for claim element [35f]. ~~EX1002, ¶190.~~

CLAIM 59

"59. The method of claim 58, wherein the adding or rendering of at least one of the one or more additional messages occurs during the streaming of the video media of the video message broadcast by the first device."

191. See analysis for claims 2, 3, 21, and 28. ~~EX1002, ¶ 191.~~

CLAIM 60

"60. The method of claim 58, wherein the adding or rendering of at least one of the one or more additional messages occurs after the streaming of the video media of the video message broadcast by the first device is complete."

192. See analysis for claims 5, 21, and 28. ~~EX1002, ¶ 192.~~

CLAIM 61

"61. The method of claim 58, further comprising organizing the one or more additional messages in a time-order, the one or more additional messages including one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data."

193. See analysis for claim 7 and claim 8. ~~EX1002, ¶ 193.~~

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CLAIM 62

"62. The method of claim 58, further comprising transcoding the video media of the video message broadcast from one encoding format as streamed by the first device to one or more second encoding format(s) as needed for rendering on the one or more second device(s) respectively."

194. See analysis for claim 12. ~~EX1002, ¶ 194.~~

CLAIM 63

"63. The method of claim 58, further comprising selectively degrading quality level(s) of the video media of the video message broadcast when streaming the video media of the video message broadcast from the messaging infrastructure along one or more delivery route(s) over the network to one or more select second device(s) respectively."

195. See analysis for claim 13. ~~EX1002, ¶ 195.~~

CLAIM 64

"64. The method of claim 58, further comprising adaptively adjusting a number of bits contained in video media payloads used to stream the video media of the video message broadcast by the messaging infrastructure to the one or more second devices, respectively."

196. See analysis for claim 18. ~~EX1002, ¶ 196.~~

CLAIM 65

"65. The method of claim 58, further comprising notifying the second users of the video message broadcast."

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197. See analysis for claim element [1c] and claims 21, 28, and 30. ~~EX1002, ¶197.~~

~~I~~XXI. SECONDARY CONSIDERATIONS

~~In~~198. It is my understanding that, in *ex parte* reexaminations of the '557 and '270 patents filed by Meta, ~~an unrelated third-party (*see* §I.B (notice of related matters)),~~ Voxer argued that there were objective indicia of ~~non-obviousness. The~~ nonobviousness. In my opinion, even if any such evidence ~~submitted by Voxer in these reexaminations, however, does not undercut Petitioner's showing here. First,~~ ~~there is no nexus between that evidence and the~~ applies to the challenged claims ~~of the '883 patent. *See Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (explaining~~and is considered, it would not overcome a determination of obviousness for at least the reason that

~~"the evidence of secondary considerations must have a 'nexus' to the claims"). Indeed, the *ex parte* reexaminations involved different patents with different claimed subject matter. Also, Petitioner respectfully requests an opportunity to respond to any argument such a nexus exists. *See id.* ("The patentee bears the burden of showing that a nexus exists."). Second~~, as explained above, Katis itself is prior art to the '883 patent, and it discloses any alleged merits of the claimed invention~~, rendering any evidence of secondary considerations ineffective. EX1002, ¶198; *see ClassCo, Inc. v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016) ("A nexus may not~~

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~~exist where, for example, the merits of the claimed invention were 'readily available in the prior art.'").~~ Finally, ~~the examiner did not rely on Voxer's purported evidence when confirming the patentability of the claims in the *ex parte* reexaminations, and.~~ ~~Voxer did not argue secondary considerations during its trial with Meta.~~

~~X. CONCLUSION~~

~~Petitioner respectfully requests that claims 1-65 of the '883 patent be canceled.~~

~~Date: July 13, 2026~~	~~/Matthew A. Smith/ (RN 49,003)~~ ~~Matthew A. Smith~~ ~~SMITH BALUCH LLP~~ ~~700 Pennsylvania Ave SE Ste. 2060~~ ~~Washington, DC 20003 (202) 669-6207~~ ~~smith@smithbaluch.com~~ ~~*Counsel for Petitioner Google LLC and YouTube, LLC*~~

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~~CLAIM LISTING APPENDIX~~

	~~Claim Language~~
~~Pre~~	~~1. A method comprising:~~ ~~maintaining a communication infrastructure on a network;~~
~~1a~~	~~receiving, at the communication infrastructure, information from a first client device used by an initiating participant, the information for forwarding video media of a video message, the video message initiating a multi-media conversation,~~
~~1b~~	~~using the information at the communication infrastructure for forwarding the video message by:~~ ~~(i) ascertaining second participants for participation in the multimedia conversation using the information;~~
~~1c~~	~~(ii) providing notifications to second client devices located on the network and associated with one or more of the second participants respectively; and~~
~~1d~~	~~(iii) streaming, by the communication infrastructure, at least portions of the video media of the video message to one or more of the second client devices as the video media of the video message is streamed by the first client device, received at the communication infrastructure, and stored by the communication infrastructure,~~

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~~1e~~	~~the streaming of the video media of the video message by the communication infrastructure enabling the one or more second client devices to render the at least portions of the video media of the video message in a real-time mode:~~ ~~(a) while the video media of the video message is streamed by the first client device; and~~
~~1f~~	~~(b) without first setting up an end-to-end connection over the network between the first client device and any of the one or more second client devices respectively; and~~

	~~Claim Language~~
~~1g~~	~~enabling the one or more second participants that have joined the multimedia conversation, during the rendering of the video media of the video message in the real-time mode, to:~~ ~~(i) selectively add to the multi-media conversation one or more additional messages that are generated in response the video message; and~~
~~1h~~	~~(ii) render the one or more additional messages that are generated in response with the video message.~~
~~2~~	~~2. The method of claim 1, wherein the adding of at least one of the one or more additional messages overlaps with the streaming of the video media of the video message by the first client device.~~

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~~3~~	~~3. The method of claim 1, further comprising enabling simultaneously rendering of:~~ ~~the video media of the video message in the real-time mode; and the one or more additional messages that is/are added while the video media of the video message is streamed by the first client device.~~
~~4~~	~~4. The method of claim 1, further comprising enabling simultaneously rendering of:~~ ~~the video media of the video message in a time-shifted mode; and the one or more additional messages added to the multi-media conversation.~~
~~5~~	~~5. The method of claim 1, wherein the adding of at least one of the one or more additional messages occurs after the streaming of the video media of the video message by the first client device is complete.~~

	~~Claim Language~~
~~6~~	~~6. The method of claim 1, further comprising enabling adding to the one or more additional messages during or after any of:~~ ~~(c) the streaming of the video media of the video message by the first client device;~~ ~~(d) the rendering of the video media of the video message in the realtime; or~~ ~~(e) the rendering of the video media of the video message in a timeshifted mode.~~

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~~7~~	~~7. The method of claim 1, wherein the one or more additional messages are organized and listed in a time order in which the one or more additional messages is/are added to the multi-media conversation respectively.~~
~~8~~	~~8. The method of claim 1, wherein the one or more additional messages selectively include one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data.~~
~~9~~	~~9. The method of claim 1, further comprising configuring the communication infrastructure to ascertain IP address(es) for the one or more second client devices respectively.~~
~~10~~	~~10. The method of claim 1, further comprising:~~ ~~enabling the initiating participant to initiate multiple multi-media conversations by creating and disseminating multiple video messages, each of which may be selectively rendered in the real-time mode, and each having one or more additional messages associated therewith; and~~ ~~enabling the initiating participant to selectively switch participation among the multiple multi-media conversations.~~

	~~Claim Language~~

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~~11~~	~~11. The method of claim 1, further comprising enabling the multi-media conversation to be searchable using one or more tags.~~
~~12~~	~~12. The method of claim 1, further comprising transcoding the video media of the video message from one encoding format as streamed by the first client device to one or more second encoding format(s) suitable for rendering on the one or more second client devices respectively.~~
~~13~~	~~13. The method of claim 1, further comprising selectively degrading a quality level of the video media of the video message when streaming the video media of the video message along a delivery route over the network to a select second client device, the quality level of the video media degraded commensurate with an ascertained bandwidth along the delivery route over the network.~~
~~14~~	~~14. The method of claim 1, further comprising providing two or more rendering options for rendering the video media of the video message, the two or more rendering options including: play; play fast; play slow; jump back; jump forward; jump to start; jump to head; rewind; pause; and play again.~~

	~~**Claim Language**~~

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~~15~~	~~15. The method of claim 1, further comprising assigning one or more attributes to the multi-media conversation, the one or more attributes including:~~ ~~(e) a name for the multi-media conversation;~~ ~~(d) a name for the initiating participant;~~ ~~(e) a name or names for the initiating participant or any of the second participant(s) that have added to the one or more additional messages respectively; or~~ ~~(f) a date or time for the video message and each of the one or more additional messages added to the multi-media conversation respectively.~~
~~16~~	~~16. The method of claim 1, wherein the streaming of the video media of the video message further comprises:~~ ~~segmenting the video media of the video message into a sequence of segments, the segments each including a payload; adaptively adjusting a number of bits representing the video media of the video message contained in the payloads of the segments, the number of bits adaptively adjusted based on an ascertained bandwidth over a network connection; and streaming the sequence of segments, with the adaptively adjusted number of bits contained in the payloads, over the network connection.~~
~~17~~	~~17. The method of claim 1, further comprising:~~ ~~transcoding the video media of the video message; and streaming the video media of the video message to the one or more second client devices as originally encoded or as transcoded as needed for rendering on the one or more second client devices respectively.~~

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	~~Claim Language~~
~~18~~	~~18. The method of claim 1, further comprising adaptively adjusting as needed a number of bits contained in video media payloads used to stream the video media of the video message by the communication infrastructure to the one or more second client devices respectively, the adaptive adjustment based on bandwidth conditions over network connection(s) between the communication infrastructure and the one or more second client devices respectively.~~
~~19~~	~~19. The method of claim 1, further comprising segmenting the video message into a plurality of indexed media payloads, the plurality of indexed media payloads associated by a message identifier and sequentially numbered so that the plurality of indexed media payloads can be rendered in the sequentially numbered order.~~
~~20~~	~~20. The method of claim 1, further comprising enabling the initiating participant to initiate multiple conversations with multiple video messages at designated times or fixed time intervals respectively.~~
~~21~~	~~21. The method of claim 1, wherein the information is indicative that the video message is a broadcast, and in response, the communication infrastructure uses the information to ascertain at least some of the second participants for broadcasting the video message.~~

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~~22~~	~~22. The method of claim 1, further comprising enabling the one or more second participants to be in an application running on their associated second client devices when notified of the video message.~~

	~~Claim Language~~
~~23~~	~~23. The method of claim 1, further comprising:~~ ~~providing a user interface for the first client device and the one or more second client devices respectively; and enabling the initiating participant, and the one or more second participants, to initiate and selectively participate in the multi-media conversation through the user interface provided on the first client device and the one or more second client devices respectively.~~
~~24~~	~~24. The method of claim 1, further comprising distributing an application defining a user interface that enables the users of the multimedia messaging service to selectively initiate and/or participate in a plurality of multi-media conversations, each including at least one video message, that can be rendered in the real-time mode.~~
~~25~~	~~25. The method of claim 1, further comprising selectively serving the video media of the video message, and the one or more additional messages, from the one or more storage locations to one of (i) the first client device, (ii) any of the one or more second client devices, or both (i) and (ii).~~

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~~26~~	~~26. The method of claim 1, wherein the video media of the video message is made available by the communication infrastructure to the one or more second client devices for rendering either in (i) the realtime mode or (ii) out of one or more storage locations in a time-shifted mode.~~
~~27~~	~~27. The method of claim 1, wherein the video message is a broadcast.~~

	~~Claim Language~~
~~28~~	~~28. The method of claim 1, further comprising:~~ ~~providing the initiating participant an ability for selectively designating the information for the video message as one of a broadcast, for an identified user, for identified multiple users, for a defined group of users, or for a channel; and configuring the communication infrastructure to ascertain the second participants, using the information, at least partially in compliance with the selected designation.~~
~~29~~	~~29. The method of claim 1, further comprising:~~ ~~providing the initiating participant an ability for designating the video message as a broadcast; and in response to the designation, configuring the communication infrastructure to broadcast the video message to at least some of the second participants.~~

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~~30~~	~~30. The method of claim 1, wherein the video message is broadcast to the second participants that positively respond to the notification respectively.~~
~~31~~	~~31. The method of claim 1, wherein the information identifies one or more users of the communication infrastructure as defined by the initiating participant.~~
~~32~~	~~32. The method of claim 1, wherein the information is useful for ascertaining a group of users of the communication infrastructure associated with the initiating participant.~~

	~~Claim Language~~
~~33~~	~~33. The method of claim 1, wherein the information is useful for ascertaining a channel having one or more users of the communication infrastructure associated therewith.~~
~~34~~	~~34. The method of claim 1, wherein the information is indicative that the video message is a broadcast.~~
~~Pre~~	~~35. A method comprising:~~ ~~maintaining a messaging infrastructure on a network;~~

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~~35a~~	~~receiving, at the messaging infrastructure, information from a first device used by an initiating participant, the information usable by the messaging infrastructure for forwarding video media of a video message, the video message initiating a conversation,~~
~~35b~~	~~using the information at the messaging infrastructure for forwarding the video message by:~~ ~~(i) ascertaining second participants for participation in the conversation using the information; and~~
~~35c~~	~~(ii) streaming, by the messaging infrastructure, at least portions of the video media of the video message to one or more second devices associated with at least some of the ascertained second participants, the streaming to the one or more second devices occurring as the video media of the video message is streamed by the first device, received at the messaging infrastructure, and stored by the messaging infrastructure,~~
~~35d~~	~~the streaming of the video media of the video message by the messaging infrastructure enabling the one or more second devices to render the at least portions of the video media of the video message in a real-time mode:~~ ~~(a) while the video media of the video message is streamed by the first device; and~~

	~~Claim Language~~
~~35e~~	~~(b) without first setting up an end-to-end connection over the network between the first device and any of the one or more second devices respectively; and~~

~~35f~~	~~enabling one or more second participants that have joined the conversation to:~~ ~~(i) selectively add to the conversation one or more additional messages; and~~
~~35g~~	~~(ii) render the one or more additional messages.~~
~~36~~	~~36. The method of claim 35, wherein the adding of at least one of the one or more additional messages overlaps with the streaming of the video media of the video message by the first device.~~
~~37~~	~~37. The method of claim 35, further comprising enabling simultaneously rendering of:~~ ~~the video media of the video message in the real-time mode; and the one or more additional messages that is/are added while the video media of the video message is being rendered in the real-time mode.~~
~~38~~	~~38. The method of claim 35, wherein the adding or rendering of at least one of the one or more additional messages occurs after the streaming of the video media of the video message by the first device is complete.~~
~~39~~	~~39. The method of claim 35, further comprising organizing the one or more additional messages in a time-order, the one or more additional messages including one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data.~~

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	~~Claim Language~~
~~40~~	~~40. The method of claim 35, further comprising transcoding the video media of the video message from one encoding format as streamed by the first device to one or more second encoding format(s) as needed for rendering on the one or more second device(s) respectively.~~
~~41~~	~~41. The method of claim 35, further comprising selectively degrading quality level(s) of the video media of the video message when streaming the video media of the video message along one or more delivery route(s) over the network to one or more select second device(s) respectively.~~
~~42~~	~~42. The method of claim 35, further comprising adaptively adjusting a number of bits contained in video media payloads used to stream the video media of the video message by the messaging infrastructure to the one or more second device(s) respectively.~~
~~43~~	~~43. The method of claim 35, wherein the information is indicative that the video message is a broadcast, and in response, the messaging infrastructure uses the information to ascertain at least some of the second participants for broadcasting the video message.~~

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~~44~~	~~44. The method of claim 35, further comprising notifying at least some of the second participants of the video message.~~

	~~Claim Language~~
~~45~~	~~45. The method of claim 35, further comprising configuring the messaging infrastructure to selectively serve from storage to the first device for rendering in a time-shifted mode one of:~~ ~~(i) the video media of the video message; (ii) the one or more additional messages; or (iii) both (i) and (ii).~~
~~46~~	~~46. The method of claim 35, further comprising configuring the messaging infrastructure to selectively serve from storage to any of the one or more second devices one of: (i) the video media of the video message; (ii) the one or more additional messages; or (iii) both (i) and (ii).~~
~~47~~	~~47. The method of claim 35, wherein the video message is a broadcast.~~
~~48~~	~~48. The method of claim 35, wherein the information is useful for ascertaining a group of users for participation in the conversation, the group of users associated with the initiating participant.~~

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~~Pre~~	~~49. A method comprising:~~ ~~maintaining a messaging infrastructure on a network;~~
~~49a~~	~~receiving, at the messaging infrastructure, information from a first device used by an initiating user, the information usable by the messaging infrastructure for forwarding video media of a video message to a group of users of the messaging infrastructure,~~
~~49b~~	~~the group of users associated with the initiating user,~~

	~~Claim Language~~
~~49c~~	~~the video message initiating a conversation between the initiating user and the group of users;~~
~~49d~~	~~forwarding, by the messaging infrastructure, the video message to at least some of the group of users by:~~ ~~(i) using the information to ascertain the group of users and to locate second devices on the network associated with at least some of the group of users; and~~
~~49e~~	~~(ii) streaming, by the messaging infrastructure, at least portions of the video media of the video message to one or more of the second devices, the streaming to the one or more second devices occurring as the video media of the video message is streamed by the first device, received at the messaging infrastructure, and stored by the messaging infrastructure,~~

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~~49f~~	~~the streaming of the video media of the video message by the messaging infrastructure enabling the one or more second devices to render the at least portions of the video media of the video message in a real-time mode:~~ ~~(a) while the video media of the video message is streamed by the first device; and~~
~~49g~~	~~(b) without first setting up an end-to-end connection over the network between the first device and any of the one or more second devices respectively; and~~
~~49h~~	~~enabling one or more of the group of users that have joined the conversation to selectively add to the conversation one or more additional messages or render the one or more additional messages.~~
~~50~~	~~50. The method of claim 49, wherein the adding or rendering of at least one of the one or more additional messages occurs during the streaming of the video media of the video message by the first device.~~

	~~Claim Language~~
~~51~~	~~51. The method of claim 49, wherein the adding or rendering of at least one of the one or more additional messages occurs after the streaming of the video media of the video message by the first device is complete.~~

~~52~~	~~52. The method of claim 49, further comprising transcoding the video media of the video message from one encoding format as streamed by the first device to one or more second encoding format(s) as needed for rendering on the one or more second device(s) respectively.~~
~~53~~	~~53. The method of claim 49, further comprising selectively degrading quality level(s) of the video media of the video message when streaming the video media of the video message from the messaging infrastructure along one or more delivery route(s) over the network to one or more select second device(s) respectively.~~
~~54~~	~~54. The method of claim 49, further comprising adaptively adjusting a number of bits contained in video media payloads used to stream the video media of the video message by the messaging infrastructure to the one or more second devices, respectively.~~
~~55~~	~~55. The method of claim 49, wherein the information is indicative that the video message is a broadcast, and in response, the messaging infrastructure broadcasts the video message to one or more among the group of users associated with the initiating user.~~
~~56~~	~~56. The method of claim 49, further comprising notifying the group of users of the video message.~~

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	~~Claim Language~~
~~57~~	~~57. The method of claim 49, further comprising organizing the one or more additional messages in a time-order, the one or more additional messages including one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data.~~
~~Pre~~	~~58. A method comprising:~~ ~~maintaining a messaging infrastructure on a network;~~
~~58a~~	~~receiving, at the messaging infrastructure, information from a first device used by an initiating user, the information usable by the messaging infrastructure for forwarding video media of a video message broadcast, the video message broadcast initiating a conversation between the initiating user and second users of the messaging infrastructure;~~
~~58b~~	~~forwarding, by the messaging infrastructure, the video message broadcast by:~~ ~~(i) using the information to ascertain the second users and to locate second devices on the network associated with at least some of the second users; and~~
~~58c~~	~~(ii) streaming, by the messaging infrastructure, at least portions of the video media of the video message broadcast to one or more of the second devices, the streaming to the one or more second devices occurring as the video media of the video message broadcast is received by the messaging infrastructure from the first device and stored by the messaging infrastructure,~~

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~~58d~~	~~the streaming of the video media of the video message broadcast by the messaging infrastructure enabling the one or more second devices to render the at least portions of the video media of the video message broadcast in a real-time mode:~~ ~~(a) while the video media of the video message broadcast is streamed by the first device; and~~

	~~Claim Language~~
~~58e~~	~~(b) without first setting up an end-to-end connection over the network between the first device and any of the one or more second devices respectively; and~~
~~58f~~	~~enabling one or more of the second users that have joined the conversation to selectively add to the conversation one or more additional messages or render the one or more additional messages.~~
~~59~~	~~59. The method of claim 58, wherein the adding or rendering of at least one of the one or more additional messages occurs during the streaming of the video media of the video message broadcast by the first device.~~
~~60~~	~~60. The method of claim 58, wherein the adding or rendering of at least one of the one or more additional messages occurs after the streaming of the video media of the video message broadcast by the first device is complete.~~

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~~61~~	~~61. The method of claim 58, further comprising organizing the one or more additional messages in a time-order, the one or more additional messages including one or more of the following media types: voice; video; photo; text; location data; sensor data; image; or other data.~~
~~62~~	~~62. The method of claim 58, further comprising transcoding the video media of the video message broadcast from one encoding format as streamed by the first device to one or more second encoding format(s) as needed for rendering on the one or more second device(s) respectively.~~
	~~**Claim Language**~~
~~63~~	~~63. The method of claim 58, further comprising selectively degrading quality level(s) of the video media of the video message broadcast when streaming the video media of the video message broadcast from the messaging infrastructure along one or more delivery route(s) over the network to one or more select second device(s) respectively.~~
~~64~~	~~64. The method of claim 58, further comprising adaptively adjusting a number of bits contained in video media payloads used to stream the video media of the video message broadcast by the messaging infrastructure to the one or more second devices, respectively.~~
~~65~~	~~65. The method of claim 58, further comprising notifying the second users of the video message broadcast.~~

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~~CERTIFICATE OF SERVICE~~

~~The undersigned hereby certifies that the foregoing petition for *inter partes* review, together with all exhibits and other documents filed therewith, was served by Priority Mail Express on the date below, on the Patent Owner's counsel of record at the United States Patent & Trademark Office having the following address:~~

~~76743 - BEYER LAW GROUP LLP / VOXER IP~~
~~P. O. Box 51887~~
~~Palo Alto, CA~~
~~UNITED STATES~~

~~Date: July 13, 2026 /Matthew A. Smith/ (RN 49,003)~~

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~~**CERTIFICATE OF WORD COUNT**~~

~~The undersigned hereby certifies that the foregoing petition for *inter partes* review contains 13,865 words according to the word processing program used to prepare it.~~

~~Date: July 13, 2026 /Matthew A. Smith/ (RN 49,003)~~

XII. OATH

199. This declaration and my opinions herein are made to the best of my knowledge and understanding, and based on the material available to me, at the time of signing this declaration. I declare under penalty of perjury under the laws of the United States of America that all statements made of my own knowledge are true and that all statements made on information and belief are believed to be true. I understand that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or any patent issuing thereon.

July 13, 2026 Henry H. Houh

Date Dr. Henry Houh

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