

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

GOOGLE LLC, SAMSUNG ELECTRONICS CO. LTD.,
AND SAMSUNG ELECTRONICS AMERICA, INC.,
Petitioner

v.

MULTIMODAL MEDIA LLC,
Patent Owner.

Case No. IPR2024-00063
U.S. Patent No. 9,185,227

**PETITION FOR *INTER PARTES* REVIEW
OF U.S. PATENT NO. 9,185,227**

TABLE OF CONTENTS

	Page
I. INTRODUCTION	1
II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8.....	2
III. FEE AUTHORIZATION	4
IV. GROUNDS FOR STANDING.....	4
V. PRECISE RELIEF REQUESTED	4
VI. THE CHALLENGED PATENT	5
VII. PROSECUTION HISTORY OF THE '227 PATENT.....	7
VIII. LEVEL OF ORDINARY SKILL IN THE ART	7
IX. PRIORITY DATE	8
X. CLAIM CONSTRUCTION	8
A. “call completion application” (Claims 1, 5-6, 9-11, 15).....	9
1. The specification supports Petitioner’s construction.....	9
2. The dependent claims contradict the <i>Oppo</i> construction.....	10
3. The agreed-upon construction is inconsistent with intrinsic evidence	11
XI. BRIEF DESCRIPTION OF THE APPLIED PRIOR ART	12
A. Prikowitsch (Ex-1011)	12
B. Roujinsky (Ex-1012).....	13
C. Sar-Shalom (Ex-1013).....	14
XII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS	16
A. Ground 1: Claims 1-2, 5, 8-12, 15, and 17-19 are Obvious Over Prikowitsch.....	16
1. Independent Claims 1 and 11.....	16
a. Elements 1[pre]/11[pre]: [A computer implemented method/A computer system] for completing an incomplete call made by a calling party to a called party, comprising	16

TABLE OF CONTENTS

(continued)

Page

b.	Element 1[a]: providing a call completion application executable by at least one processor on a calling party device;.....	17
	Element 11[a]: a non-transitory computer readable storage medium configured to store a call completion application on a calling party device;.....	17
	Element 11[b]: at least one processor communicatively coupled to said non-transitory computer readable storage medium, said at least one processor configured to execute said call completion application on said calling party device; and.....	17
c.	Element 1[b]: detecting said incomplete call made by said calling party to said called party, by said call completion application on said calling party device,.....	19
	Element 1[c]: wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events;	19
	Element 11[c]: said call completion application on said calling party device, comprising:	19
	Element 11[d]: a call detection module configured to detect said incomplete call made by said calling party to said called party,.....	19
d.	Element 1[d(i)]: receiving one or more of a plurality of call completion actions to be performed by said call completion application on said calling party device to complete said detected incomplete call,.....	21
	Element 11[e(i)]: an action determination module configured to receive one or more of a plurality of call completion actions to be performed to complete said detected incomplete call, ...	21

TABLE OF CONTENTS

(continued)

	Page
e. Elements 1[d(ii)]/11[e(ii)]: wherein said plurality of call completion actions are selected according to one or more responses provided by said calling party through a graphical user interface of said calling party device,.....	22
f. Elements 1[d(iii)]/11[e(iii)]: wherein said call completion actions comprise [1] setting a reminder to call back said called party at a configurable time, [2] recording media data on said calling party device, [3] transmitting said media data to a called party device, [4] transmitting a missed call alert to said called party device, [5] transmitting a notification of said detected incomplete call to said called party device, [6] transmitting a notification on availability of said called party, [7] transmitting said media data to a social networking platform, [8] transmitting an automated message requesting said called party to call back said calling party when available, and [9] any combination thereof; and.....	23
g. Element 1[e]: triggering execution of said received one or more of said call completion actions by said call completion application on said calling party device based on one or more of action execution criteria for said completion of detected incomplete call.....	25
Element 11[f]: an action execution module configured to trigger execution of said received one or more of said call completion actions based on one or more of action execution criteria one or more responses selected by said calling party for said completion of said detected incomplete call.	25
2. Dependent Claims 2, 5, 8-10, 12, 15, and 17-19	26

TABLE OF CONTENTS
(continued)

	Page
a. Element 12[a]: The computer system of claim 11, wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events,.....	26
b. Claim 2/Element 12[b]: [The computer implemented method of claim 1/The computer system of claim 11,] wherein said events comprise said called party being busy, said called party device being in an out of coverage area, said called party device being unreachable, said called party device being switched off, network congestion, and said call not being answered by said called party.	27
c. Claims 5 and 15	28
d. Claims 8/17: [The computer implemented method of claim 1/The computer system of claim 11], wherein said media data comprises one of text data, audio data, video data, audiovisual data, image data, multimedia data, message data, and any combination thereof.	33
e. Claims 9/18: [The computer implemented method of claim 1, further comprising determining/The computer system of claim 11, wherein said action execution module is further configured to determine] a mode of transmission of media data from said calling party device to a called party device via a network, by said call completion application on said calling party device based on one or more of said action execution criteria.	34

TABLE OF CONTENTS

(continued)

	Page
f. Claims 10/19: [The computer implemented method of claim 1, further comprising monitoring/The computer system of claim 11, wherein said call detection module is further configured to monitor] said incomplete call by said call completion application on said calling party device as said incomplete call progresses from said incomplete call being initiated, said incomplete call being one of answered and rejected, and said incomplete call being terminated.	35
B. Ground 2: Claims 3-4, 9, 13-14, and 18 are Rendered Obvious by Prikowitsch in View of Roujinsky	37
1. A POSITA would have been motivated to combine Prikowitsch and Roujinsky and had a reasonable expectation of success.....	37
2. Dependent Claims 3-4, 9, 13-14, and 18	39
a. Claims 3/13: [The computer implemented method of claim 1/The computer system of claim 11], wherein said incomplete call is a call of a short duration that does not enable an intended communication to occur between said calling party and said called party.	39
b. Claim 4: The computer implemented method of claim 1, wherein said one or more of said call completion actions are received by said call completion application based on a duration of said detected incomplete call	40
Claim 14: The computer system of claim 11, wherein said action determination module is further configured to receive said one or more of said call completion actions based on a duration of said detected incomplete call.....	40

TABLE OF CONTENTS

(continued)

Page

c.	Claims 9/18: [The computer implemented method of claim 1, further comprising determining/The computer system of claim 11, wherein said action execution module is further configured to determine] a mode of transmission of media data from said calling party device to a called party device via a network, by said call completion application on said calling party device based on one or more of said action execution criteria.	41
C.	Ground 3: Claims 1-2, 6, 8-12, and 17-19 are Rendered Obvious by Sar-Shalom	42
1.	Independent Claims 1 and 11.....	42
a.	Elements 1[pre]/11[pre]: [A computer implemented method/A computer system] for completing an incomplete call made by a calling party to a called party, comprising	42
b.	Element 1[a]: providing a call completion application executable by at least one processor on a calling party device;.....	43
	Element 11[a]: a non-transitory computer readable storage medium configured to store a call completion application on a calling party device;.....	43
	Element 11[b]: at least one processor communicatively coupled to said non-transitory computer readable storage medium, said at least one processor configured to execute said call completion application on said calling party device; and	43
c.	Element 1[b]: detecting said incomplete call made by said calling party to said called party, by said call completion application on said calling party device, ...	45

TABLE OF CONTENTS (continued)

	Page
Element 1[c]: wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events;	45
Element 11[c]: said call completion application on said calling party device, comprising:	45
Element 11[d]: a call detection module configured to detect said incomplete call made by said calling party to said called party.....	45
d. Element 1[d(i)]: receiving one or more of a plurality of call completion actions to be performed by said call completion application on said calling party device to complete said detected incomplete call,.....	47
Element 11[e(i)]: an action determination module configured to receive one or more of a plurality of call completion actions to be performed to complete said detected incomplete call, ...	47
e. Elements 1[d(ii)]/11[e(ii)]: wherein said plurality of call completion actions are selected according to one or more responses provided by said calling party through a graphical user interface of said calling party device,.....	48

TABLE OF CONTENTS

(continued)

Page

f.	Elements 1[d(iii)]/11[e(iii)]: wherein said call completion actions comprise [1] setting a reminder to call back said called party at a configurable time, [2] recording media data on said calling party device, [3] transmitting said media data to a called party device, [4] transmitting a missed call alert to said called party device, [5] transmitting a notification of said detected incomplete call to said called party device, [6] transmitting a notification on availability of said called party, [7] transmitting said media data to a social networking platform, [8] transmitting an automated message requesting said called party to call back said calling party when available, and [9] any combination thereof; and.....	49
g.	Element 1[e]: triggering execution of said received one or more of said call completion actions by said call completion application on said calling party device based on one or more of action execution criteria for said completion of detected incomplete call.....	50
	Element 11[f]: an action execution module configured to trigger execution of said received one or more of said call completion actions based on one or more of action execution criteria one or more responses selected by said calling party for said completion of said detected incomplete call.....	50
2.	Dependent Claims 2, 6, 8-10, 12, and 17-19	52
a.	Element 12[a]: The computer system of claim 11, wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events,.....	52

TABLE OF CONTENTS
(continued)

Page

b.	Claim 2/Element 12[b]: [The computer implemented method of claim 1/ The computer system of claim 11,] wherein said events comprise said called party being busy, said called party device being in an out of coverage area, said called party device being unreachable, said called party device being switched off, network congestion, and said call not being answered by said called party.	53
c.	Claim 6: The computer implemented method of claim 1, wherein said one or more of said call completion actions to be performed by said call completion application on said calling party device to complete said detected incomplete call is based on one or more of configurable criteria configured by said calling party.....	54
d.	Claims 8/17: [The computer implemented method of claim 1/The computer system of claim 11], wherein said media data comprises one of text data, audio data, video data, audiovisual data, image data, multimedia data, message data, and any combination thereof.	54
e.	Claims 9/18: [The computer implemented method of claim 1, further comprising determining/The computer system of claim 11, wherein said action execution module is further configured to determine] a mode of transmission of media data from said calling party device to a called party device via a network, by said call completion application on said calling party device based on one or more of said action execution criteria.	55

TABLE OF CONTENTS

(continued)

Page

f.	Claims 10/19: [The computer implemented method of claim 1, further comprising monitoring/The computer system of claim 11, wherein said call detection module is further configured to monitor] said incomplete call by said call completion application on said calling party device as said incomplete call progresses from said incomplete call being initiated, said incomplete call being one of answered and rejected, and said incomplete call being terminated.	56
D.	Ground 4: Claims 3-5 and 13-15 are Obvious Over Sar-Shalom in View of Roujinsky	56
1.	A POSITA would have been motivated to combine Sar-Shalom and Roujinsky and had a reasonable expectation of success	56
2.	Dependent Claims 3-5 and 13-15	59
a.	Claims 3/13: [The computer implemented method of claim 1/The computer system of claim 11], wherein said incomplete call is a call of a short duration that does not enable an intended communication to occur between said calling party and said called party.	59
b.	Claim 4: The computer implemented method of claim 1, wherein said one or more of said call completion actions are received by said call completion application based on a duration of said detected incomplete call.	60
	Claim 14: The computer system of claim 11, wherein said action determination module is further configured to receive said one or more of said call completion actions based on a duration of said detected incomplete call.	60
c.	Claims 5 and 15	61

TABLE OF CONTENTS
(continued)

	Page
XIII. THE BOARD SHOULD NOT USE ITS DISCRETION TO DENY INSTITUTION UNDER <i>FINTIV</i>	69
XIV. CONCLUSION.....	73

LIST OF EXHIBITS¹

Ex-1001	U.S. Patent No. 9,185,227
Ex-1002	Declaration of Dr. Benjamin B. Bederson
Ex-1003	Curriculum Vitae of Dr. Benjamin B. Bederson
Ex-1004	File History of U.S. Patent No. 9,185,227
Ex-1005	INTENTIONALLY LEFT BLANK
Ex-1006	INTENTIONALLY LEFT BLANK
Ex-1007	INTENTIONALLY LEFT BLANK
Ex-1008	INTENTIONALLY LEFT BLANK
Ex-1009	INTENTIONALLY LEFT BLANK
Ex-1010	INTENTIONALLY LEFT BLANK
Ex-1011	PCT Publication WO 2010139478 (“Prikowitsch”)
Ex-1012	PCT Publication WO2008050325 (“Roujinsky”)
Ex-1013	U.S. Patent Publication No. 20040267884 (“Sar-Shalom”)
Ex-1014	INTENTIONALLY LEFT BLANK
Ex-1015	INTENTIONALLY LEFT BLANK
Ex-1016	INTENTIONALLY LEFT BLANK
Ex-1017	INTENTIONALLY LEFT BLANK
Ex-1018	INTENTIONALLY LEFT BLANK
Ex-1019	INTENTIONALLY LEFT BLANK
Ex-1020	Claim Mapping Table

¹ Four-digit pin citations that begin with 0 are to the branded numbers added by Petitioner in the bottom right corner of the exhibits. All other pin citations are to original page, column, paragraph, or line numbers.

Ex-1021	<i>Multimodal Media LLC v. Guangdong Oppo Mobile Telecommunications Corp., Ltd.</i> , 2:21-cv-00436, D.I. 65 (E.D. Tex. Apr. 24, 2023) (Claim Construction Order) (“ <i>Oppo</i> Litigation”)
Ex-1022	<i>Multimodal Media LLC v. TCL Technology Group Corporation et al.</i> , 2:22-cv-00463, D.I. 23 (E.D. Tex. Feb. 22, 2023) (Stay Order) (“ <i>TCL</i> litigation”)
Ex-1023	<i>Multimodal Media LLC v. Samsung Electronics Co., Ltd. et al.</i> , 2:22-cv-00462, Infringement Contentions (E.D. Tex. May 30, 2023) (“Samsung Infringement Contentions”)
Ex-1024	INTENTIONALLY LEFT BLANK
Ex-1025	INTENTIONALLY LEFT BLANK
Ex-1026	Benjamin B. Bederson & James D. Hollan, Pad++: A Zooming Graphical Interface for Exploring Alternate Interface Physics, UIST ‘94 Proceedings of the 7th Annual ACM Symposium on User Interface Software and Technology 17 (1994), DOI: http://dx.doi.org/10.1145/192426.192435
Ex-1027	INTENTIONALLY LEFT BLANK
Ex-1028	INTENTIONALLY LEFT BLANK
Ex-1029	INTENTIONALLY LEFT BLANK
Ex-1030	INTENTIONALLY LEFT BLANK
Ex-1031	David Dearman, Amy Karlson, Brian Meyers, and Ben Bederson, Multi-modal text entry and selection on a mobile device (2010), In Proceedings of Graphics Interface 2010 (GI ‘10), Canadian Information Processing Society, CAN, 19–26
Ex-1032	INTENTIONALLY LEFT BLANK
Ex-1033	INTENTIONALLY LEFT BLANK
Ex-1034	INTENTIONALLY LEFT BLANK
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Ex-1037	INTENTIONALLY LEFT BLANK
Ex-1038	INTENTIONALLY LEFT BLANK
Ex-1039	INTENTIONALLY LEFT BLANK
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Ex-1045	INTENTIONALLY LEFT BLANK
Ex-1046	<i>Multimodal Media LLC v. Guangdong Oppo Mobile Telecommunications Corp., Ltd.</i> , 2:21-cv-00436, D.I. 74 (E.D. Tex. Sept. 6, 2023) (Order of Dismissal)
Ex-1047	Rebecca L.J. Chen, et al., Business Models and Drivers for Next-Generation IMS Services (2007)
Ex-1048	U.S. Patent No. 6,639,973 (“Wheeler”)
Ex-1049	U.S. Patent Publication No. 20030169865 (“Oren”)
Ex-1050	U.S. Patent Publication No. 20090142085 (“Anderl”)
Ex-1051	U.S. Patent No. 8,340,702 (“Bychkov”)
Ex-1052	U.S. Patent No. 8,229,409 (“Bluvand”)
Ex-1053	Harvey G. Cragon, Computer Architecture and Implementation (2000)
Ex-1054	Nokia 7650 User’s Guide

I. INTRODUCTION

Google LLC, Samsung Electronics Co. Ltd., and Samsung Electronics America, Inc. (collectively, “Petitioner”) request *inter partes* review (“IPR”) of Claims 1-6, 8-15, and 17-19 of U.S. Patent No. 9,185,227 (“the ’227 Patent”) (Ex-1001), currently assigned to Multimodal Media LLC (“PO”).

The challenged claims generally recite using a call completion application on a calling party’s device to complete an incomplete call by executing prescribed actions, such as when the called party is busy or offline. Ex-1001, Cls. 1, 2, 11-12.

The prior art teaches the claimed call completion application—including the well-known features to determine when a call is incomplete and execute responsive call completion actions. Accordingly, Claims 1-6, 8-15, and 17-19 of the ’227 Patent are obvious over the prior art.

This Petition presents grounds that the examiner did not consider during prosecution. These grounds are more than reasonably likely to prevail, and this Petition should be granted.

II. MANDATORY NOTICES UNDER 37 C.F.R. §42.8

Real Parties-in-Interest: Petitioner identifies the following real parties-in-interest: Google LLC², Samsung Electronics Co. Ltd., and Samsung Electronics America, Inc.

Related Matters: A decision in this proceeding could affect or be affected by the following proceedings, which assert infringement of the challenged '227 Patent: (1) *Multimodal Media LLC v. Samsung Electronics Co. Ltd., et al.*, 2:22-CV-00462 (E.D. Tex.); and (2) *Multimodal Media LLC v. TCL Technology Group Corporation et al.*, 2:22-cv-00463 (E.D. Tex.). Co-Petitioner Google has not been named in, and is not a party to, any litigation involving the '227 Patent.

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² Google LLC is a subsidiary of XXVI Holdings Inc., a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest here.

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III. FEE AUTHORIZATION

Pursuant to 37 C.F.R. §42.15(a) and §42.103(a), the PTO is authorized to charge any and all fees to Deposit Account No. LA500639.

IV. GROUNDS FOR STANDING

Petitioner certifies that the '227 Patent is available for review, this Petition is timely filed, and Petitioner is not barred or estopped from requesting review.

V. PRECISE RELIEF REQUESTED

Petitioner requests review and cancellation of Claims 1-6, 8-15, and 17-19 as unpatentable based on the following grounds, supported by a declaration from Dr. Benjamin Bederson. Ex-1002 ¶¶1-31.

Ground	Summary
1	Claims 1-2, 5, 8-12, 15, and 17-19 are obvious over Prikowitsch (Ex-1011)

Ground	Summary
2	Claims 3-4, 9, 13-14, and 18 are obvious over Prikowitsch in view of Roujinsky (Ex-1012)
3	Claims 1-2, 6, 8-12, and 17-19 are obvious over Sar-Shalom (Ex-1013)
4	Claims 3-5 and 13-15 are obvious over Sar-Shalom in view of Roujinsky

VI. THE CHALLENGED PATENT

The '227 Patent purports to describe a method and system for completing an incomplete call made by a calling party to a called party by executing a call completion action (Ex-1001, 2:5-16) which allegedly resolves a long felt need over conventional call completion solutions such as voicemail which are “dependent on the called party having enabled a voice message service for receipt of voice messages.” *Id.*, 1:44-50. Figure 1A illustrates the method of the invention:

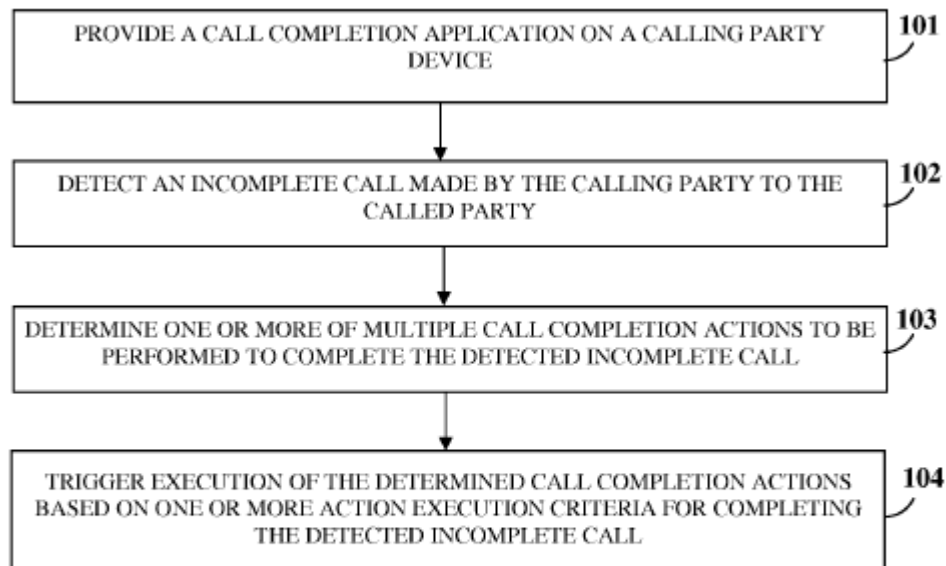


FIG. 1A

As the figure illustrates, a call completion application is provided on a calling party's device, Ex-1001, 6:14-20, which detects an "incomplete call" made to a called party (*id.*, 6:44-46). An "incomplete call" is one that is "not received or completed by the called party, or not connected to the called party device," because the called party's device is busy, out of coverage, unreachable, switched off, subject to network congestion, or the call is of short duration or unanswered. Ex-1001, 6:46-59. In response to detecting an incomplete call, the call completion application executes a call completion action to "complete the detected incomplete call." *Id.*, 7:15-18. Call completion actions include setting a reminder to call again, transmitting a recorded message, missed call alert or notification, availability

notification, or automated message to the called party's device. *Id.*, 7:18-28. Simply put, the '227 Patent purports to allow a user to send a message or reminder to the called party in response to an unanswered call. Ex-1002 ¶¶52-55.

VII. PROSECUTION HISTORY OF THE '227 PATENT

The '227 Patent was filed on December 12, 2013 and claims priority to a provisional application filed on December 14, 2012. After the claims were found anticipated (Ex-1004, 116-131), applicant amended the claims to add limitations reciting specific call completion actions that can be received and performed by the call completion application. Applicant argued that the prior art did not teach “receiving one or more of a plurality of call completion actions ... selected according to one or more responses provided by said calling party.” *Id.*, 139-151. Based on this argument, the examiner allowed all claims. Ex-1004, 170-172, 186.

VIII. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art at the relevant time (“POSITA”) would have had a bachelor's degree in electrical engineering, computer science, computer engineering, or a related field, and two-three years of experience with multimedia and Internet-related communications technologies, or the equivalent, with additional education substituting for experience and vice versa. Ex-1002 ¶¶28-30.

IX. PRIORITY DATE

The earliest possible priority for the '227 Patent is December 14, 2012. Petitioner takes no position on the proper priority date for each claim of the '227 Patent. Assuming this earliest date, all prior art references asserted in this petition are prior art. Ex-1002 ¶56.

X. CLAIM CONSTRUCTION³

Petitioner interprets the claims of the '227 Patent according to the *Phillips* claim construction standard. 37 C.F.R. §42.100(b). For the purposes of this Petition, Petitioner does not believe that any term requires explicit construction to resolve the issues presented in this Petition, except for the following term.⁴ All others should be given their plain and ordinary meaning.⁵ Ex-1002 ¶¶57-65.

³ Petitioner has adopted these constructions only for purposes of this Petition and reserves the right to propose and/or adopt any construction in any pending litigation matter.

⁴ Claim construction in the Samsung litigation is in the early stages. Accordingly, Petitioner reserves the right to present additional claim constructions arguments in the district court, including arguments that certain claim elements may be subject to 35 U.S.C. §112, ¶6 and/or that that corresponding structure for performing a recited function is not sufficiently disclosed.

⁵ The term “one of text data, audio data, ... and any combination thereof” of claims 8 and 17 was also construed to be “one of text data, audio data, ... and any combination thereof.” Ex-1021, 27. Accordingly, Petitioner relies on plain and ordinary meaning. Ex-1002 ¶65.

A. “call completion application” (Claims 1, 5-6, 9-11, 15)

The parties in the *Oppo* litigation⁶ reached an agreement that this term means “a software module that completes an incomplete call made by a calling party without any dependence on the underlying network or called party’s device.” Ex-1021, 47. Petitioner disagrees with this agreed-upon construction. Instead, the claim should be given its plain and ordinary meaning in view of the specification, which is: “a software module that completes an incomplete call made by a calling party that is independent of a preconfigured call completion service, such as voicemail, that is on the called device.”

1. The specification supports Petitioner’s construction

The ’227 Patent states that the call completion application is “independent *of a preconfigured call completion service on the called party’s network or a called party device.*”⁷ Ex-1001, 1:53-62. A “call completion service” is, for example, a voicemail service on the called device. *Id.*, 1:24-43. Therefore, the specification makes clear that the call completion application is “independent of a preconfigured call completion service” like a voicemail on the called party’s device or network.

The *Oppo* construction is wrong because the specification explains the claimed call completion application as a “software module that completes an

⁶ On September 6, 2023, the *Oppo* litigation was dismissed due to settlement (Ex-1046).

⁷ Emphases have been added herein unless otherwise noted.

incomplete call made by a calling party” by “transmit[ing] a message of the calling party to the called party device via the network based on one or more action execution criteria.” Ex-1001, 3:56-59. Moreover, the ’227 Patent establishes a “communications link between the calling party” on a “first network component” and a “second network component” of the called party. *Id.*, 6:18-30. In other words, the call completion application clearly depends, at least in part, on the called party’s network connection to work.

2. The dependent claims contradict the *Oppo* construction

The dependent claims themselves do not support the narrow construction that was agreed to by the parties in the *Oppo* litigation. Claims 1 and 11 require a call completion application that detects an “incomplete call” based on “one or more of a plurality of events.” Claims 2 and 12 narrow the events to the called party device being busy, out of a coverage area, unreachable, switched off, subject to network congestion, or the call unanswered. Claims 5 and 15 recite action execution criteria based on the “network options” provided to the called party device.

Thus, dependent Claims 2, 5, 12, and 15 explicitly depend at some level “on the underlying network or called party’s device.” Independent Claims 1 and 11 cannot exclude “the underlying network or called party’s device” without contradicting the dependent claims. *See Multilayer Stretch Cling Film Holdings, Inc.*

v. Berry Plastics Corp., 831 F.3d 1350, 1362 (Fed. Cir. 2016) (“A dependent claim that contradicts, rather than narrows, the claim from which it depends is invalid.”).

3. The agreed-upon construction is inconsistent with intrinsic evidence

In addition to not being tethered to the specification or reconcilable with the dependent claims, the *Oppo* construction simply makes no sense. Making the call completion service operate “without any dependence on the underlying network or called party’s device” misunderstands how call-related applications work. Calls are made over a network and to called devices and, therefore, contrary to the *Oppo* construction, applications for making calls must at least have some dependency on network and messaging protocols. Ex-1002 ¶¶58-64. Accordingly, the prior agreement reached by the *Oppo* litigation parties does not and cannot reflect the proper understanding of this term.

On the other hand, consistent with the intrinsic evidence, the plain meaning of the claimed “call completion application” should be understood as “a software module that completes an incomplete call made by a calling party that is independent of a preconfigured call completion service, such as voicemail, that is on the called device.” Petitioner applies this construction for purposes of this Petition.

XI. BRIEF DESCRIPTION OF THE APPLIED PRIOR ART

A. Prikowitsch (Ex-1011)

Prikowitsch was published as WO2010/139478 on December 9, 2010.⁸

Prikowitsch is §102(b) prior art.

Prikowitsch discusses a call control method that allows a calling party to define customized actions to react to reported call statuses, Ex-1011, 1:22-2:2, such as when the called party is busy or not logged into the network. *Id.*, 4:13-15. Specifically, Prikowitsch discloses a call application on the calling party device (*id.*, 4:30-32), which monitors the call from a calling party (10, blue) to a called party (40, orange) and processes events based on detected and “reported status.” *Id.*, 6:33-7:2, Fig. 4 (annotated). The reported status (46, red) includes “call status,” “login status of the called terminal device,” “availability of the called terminal device and/or the network status.” *Id.*, 3:5-15, Cl. 2. The call application evaluates the reported status (Ex-1011, 2:13-18) and allows the user to implement and control the responsive action. *Id.*, 7:4-7. The application provides a user interface and contains “logic for how to react to respective events.” *Id.*, 7:16-19.

⁸ For ease of reference, Petitioner has added line numbers to the reference and cites to the page and appropriate line number.

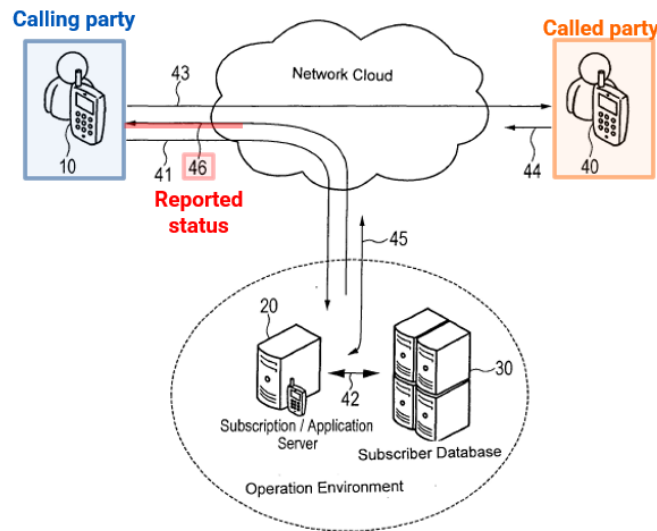


Fig. 4

The user's responsive actions include individual announcements, implementing diversion or call forwarding options, and sending ready-made text and voice messages in response to the called party device being unavailable or busy. Ex-1011, 5:26-33, 7:4-15; Ex-1002 ¶¶66-68.

B. Roujinsky (Ex-1012)

Roujinsky was published as WO2008/050325 on May 2, 2008. Roujinsky is §102(b) prior art.

Roujinsky discloses “call completion” software stored on the calling party device that compiles a list of unanswered calls, which trigger “a user-defined action so as to enable communication” between a calling party and called party. Ex-1012, 10:28-11:1. Specifically, Roujinsky's software registers an “uncompleted call” (*id.*,

16:9-14) if the called party's device is busy, out of coverage, turned off, experiencing network problems, or the call is of short duration. Ex-1012, 1:6-16, Fig. 3 (green).

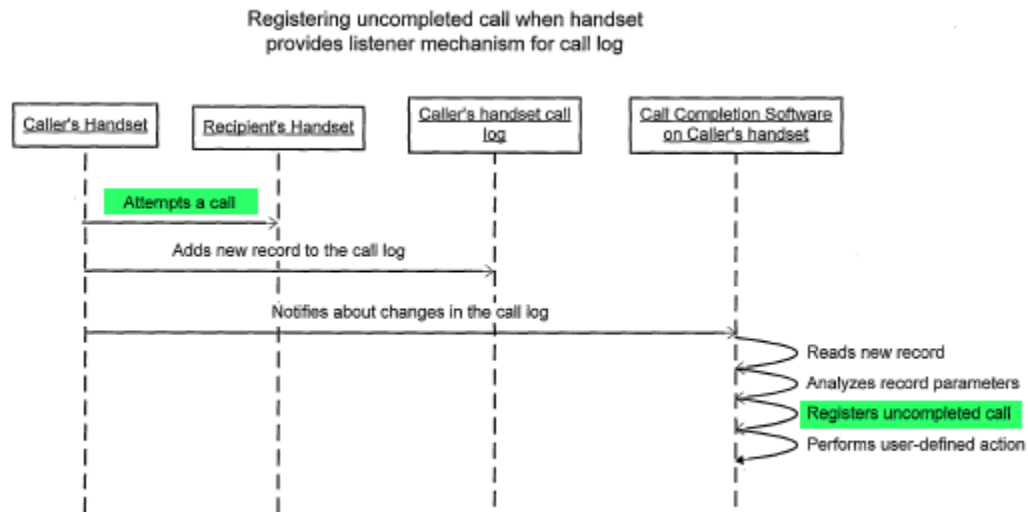


FIG. 3

Roujinsky's software performs a user-defined action for "unanswered calls," including automatically issuing a predefined SMS, MMS, or voice message to the called party about the call attempt with an invitation to return the call, automatically prompting the caller to record and send a customized message, or setting an automatic reminder to call the recipient again. Ex-1012, 12:13-30; Ex-1002 ¶¶69-71.

C. Sar-Shalom (Ex-1013)

Sar-Shalom was published as US2004/0267884 on December 30, 2004. Sar-Shalom is §102(b) prior art.

Sar-Shalom discloses a messaging client on a calling party's device to automatically perform "selected tasks or processes" when the called party's device

is unavailable. Ex-1013, Abstract, ¶25. For example, Sar-Shalom's Figure 3 discloses that a determination is made whether a call is answered by the called party (S310, yellow). *Id.* ¶53. The called party is considered "unavailable" if "a busy signal is detected," the call "is not answered after a predetermined number of rings," "connects to a voicemail box," or the called party device is offline. *Id.* ¶38.

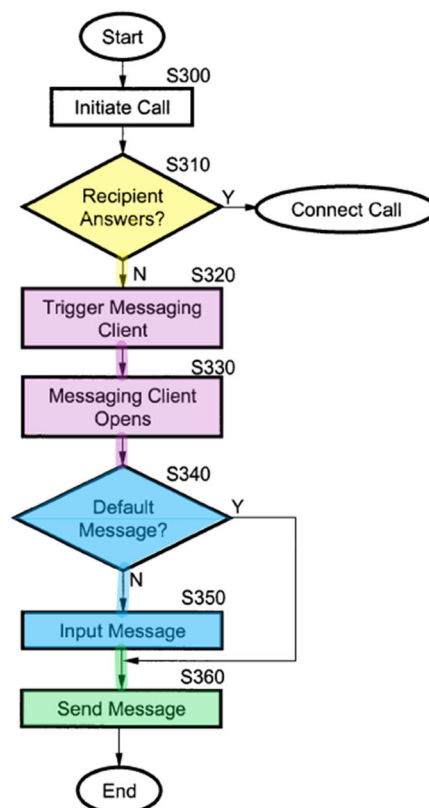


FIG. 3

If the call is not answered, the messaging client launches on the calling party's device (S320-S330, purple) (Ex-1013 ¶53), which allows the user to choose a response action. *Id.* ¶45. The application determines "whether a default message is available" (S340, blue) or allows the calling party to input a message (S350, blue),

which is then sent to the called party (S360, green). *Id.* The calling party may define the message that is sent (*id.* ¶42) as an “SMS, EMS, or MMS message” comprising text, audio, video, images, etc. *Id.* ¶40; Ex-1002 ¶¶72-74.

XII. DETAILED EXPLANATION OF THE UNPATENTABILITY GROUNDS

Claims 1-6, 8-15, and 17-19 of the '227 Patent are substantially similar. Like claim elements are discussed together in the below element-by-element analysis. *See* Ex-1020 (summary table). To the extent there are meaningful differences, such differences are individually identified and discussed. As explained below, the challenged claims are disclosed and/or taught by the prior art. Ex-1002 ¶¶32-51, 75; Exs-1047-1054.

A. Ground 1: Claims 1-2, 5, 8-12, 15, and 17-19 are Obvious Over Prikowitsch

1. Independent Claims 1 and 11

- a. Elements 1[pre]/11[pre]: [A computer implemented method/A computer system] for completing an incomplete call made by a calling party to a called party, comprising**

Prikowitsch teaches the preambles of Claims 1 and 11. Ex-1002 ¶76. Prikowitsch teaches a call control method that allows a calling party to customize and define actions to react to reported call statuses (Ex-1011, 1:22-2:2), such as when the called party is busy or offline. *Id.*, 4:13-15. The call application on the calling party device (*id.*, 4:30-32) allows the calling party to complete an incomplete call

by, for example, sending a text or voice message to the called party device. *Id.*, 7:4-15; 2:20-23, Cl. 11 (calling application is a “computer program product”).

- b. Element 1[a]: providing a call completion application executable by at least one processor on a calling party device;**

Element 11[a]: a non-transitory computer readable storage medium configured to store a call completion application on a calling party device;

Element 11[b]: at least one processor communicatively coupled to said non-transitory computer readable storage medium, said at least one processor configured to execute said call completion application on said calling party device; and

Prikowitsch teaches Elements 1[a] and 11[a]-11[b]. Ex-1002 ¶77. Prikowitsch teaches a call competition application executable on a calling party device. Ex-1011, 4:30-32. The application monitors a calling party’s call (10, blue) to a called party (40, orange) and processes events based on reported “status information.” *Id.*, 6:33-7:2, 7:26-27, Fig. 4 (annotated). The status (46, red) includes “the call status,” “login status of the called terminal device,” “availability of the called terminal device[,] and/or the network status.” *Id.*, 3:5-15, Cl. 2. The call application evaluates the reported status (*id.*, 2:13-18) and allows the user to implement a desired response such as call forwarding, or sending individual announcements, text, or voice messages to the called party. *Id.*, 7:4-15.

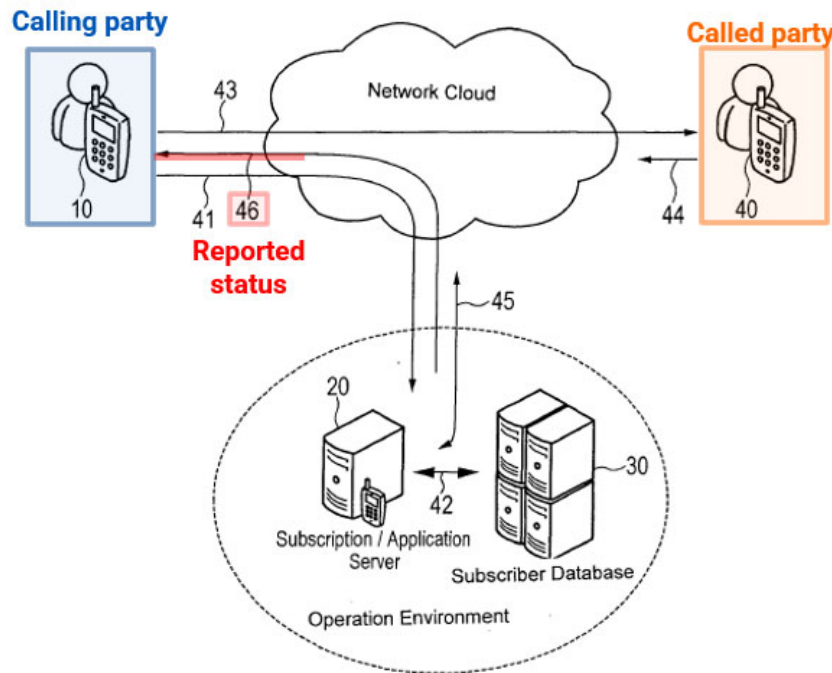


Fig. 4

Prikowitsch’s application software processes these responsive actions that “complete” an unanswered call, such as sending a ready-made text message to the called party. Text messages are independent of a preconfigured call completion service, such as voicemail, because a text message is not sent over the voice channel. Ex-1002 ¶78. Text messages are instead sent with a distinct service, SMS, that does not operate using a call completion service such as voicemail. *Id.* Moreover, a POSITA would have understood that the application is executable by a processor because the application contains “logic for how to react to respective events.” Ex-1011, 7:16-19; Ex-1002 ¶¶78-80; Ex-1053; Ex-1050 ¶¶19, 35.

Prikowitsch further teaches a non-transitory computer readable storage medium communicatively coupled to the processor and configured to store the call completion application on the calling party device. Specifically, Prikowitsch discloses a “computer program product” that executes the call completion application method on the calling party’s mobile device. Ex-1011, 2:20-23, 4:30-33, Cl. 11; *see also id.* 5:19-21 (application software on the calling party’s device). To execute the application, a memory would store the application, such as Prikowitsch’s “memory unit associated with said terminal device.” *Id.*, 3:34-4:2. The terminal memory unit would include program memory accessible to the processor. Ex-1002 ¶¶79-80.

- c. **Element 1[b]: detecting said incomplete call made by said calling party to said called party, by said call completion application on said calling party device,**

Element 1[c]: wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events;

Element 11[c]: said call completion application on said calling party device, comprising:

Element 11[d]: a call detection module configured to detect said incomplete call made by said calling party to said called party,

Prikowitsch teaches Elements 1[b]-1[c] and 11[c]-11[d]. Ex-1002 ¶81. Prikowitsch teaches detecting an incomplete call made by the calling party to the called party by a call completion application. *Id.* Specifically, Prikowitsch teaches a

call completion application, which monitors a call from a calling party to a called party based on “reported status information.” Ex-1011, 6:33-7:2. The reported status includes “the call status,” “login status of the called terminal device,” “availability of the called terminal device and/or the network status.” *Id.*, 3:5-15, Cl. 2. The “call status” includes whether the call is incomplete due to the called party being busy (Ex-1011, 4:15 (“the line is busy”), Cl. 2 (an example “event” is the “called party being busy”)), not logged in (Ex-1011, 3:11-15, 4:14-15 (“login status of the called terminal device”)), or unreachable (Ex-1011, 5:33 (“subscriber is unavailable”)). *See also* Ex-1011, 2:13-18, 3:5-8, 13:5-9; Ex-1002 ¶¶32-41.

Prikowitsch’s call application on the calling party device performs the “detecting” step, based on the reported status information. Ex-1011, 5:19-33, 7:4-15; *see also id.*, 13:5-9 (“event 44 ... is signalled 46 to the application ... for further evaluation”), 2:29-3:3 (“preferably realized by a software”). A POSITA would have understood that Prikowitsch’s call application includes “a call detection module,” i.e., software to detect the incomplete call because it is a “computer program product” made up of software instructions executable by the processor on the user’s terminal device. Ex-1002 ¶82; Ex-1049 ¶6, Claims 15, 22-24.

- d. **Element 1[d(i)]: receiving one or more of a plurality of call completion actions to be performed by said call completion application on said calling party device to complete said detected incomplete call,**

Element 11[e(i)]: an action determination module configured to receive one or more of a plurality of call completion actions to be performed to complete said detected incomplete call,

Prikowitsch teaches Elements 1[d(i)] and 11[e(i)]. Ex-1002 ¶83. Prikowitsch teaches that the calling party defines individualized outgoing actions allowing the call completion application “to react to any reported call statuses” as the user desires (Ex-1011, 1:22-2:2), if the called party is unavailable. *Id.*, 5:26-34. For example, the calling party may prescribe the following actions: “individual announcements, tones or music,” “diversions and call forwarding operations,” “send ready-made” text, multimedia, and/or individual recorded voice messages, “generate and transmit appropriate announcements,” and “make calendar entries” to return calls. *Id.*, 5:26-34; *see also id.*, 4:26-27 (application “configure[s] the actions to be performed on the basis of the status report”). These user-defined actions are implemented when the called party device is, for example, unavailable or busy, such that the call cannot be completed. Ex-1011, 5:21-33, 7:4-15. A POSITA would have understood that the calling party could predefine call completion actions on their device such that the “receiving” step in Claim 1 would be performed before the “detecting” step as an obvious matter of design choice. Ex-1002 ¶83; Ex-1048, 2:3-10, 2:34-39, 4:15-20.

Indeed, Claims 6-7 of the '227 Patent recite an embodiment wherein the actions are based on the calling party's preconfigured criteria (such as the calling party device's call settings). Ex-1001, Cls. 6-7; *see also id.*, 7:61-67 (“[A] calling party can configure sending a missed call alert ... each time a call to a specific number of the called party results in being unanswered.”).

The call completion application on the calling party's device “contains the logic for how to react to respective events.” Ex-1011, 6:1-3. A POSITA would have understood that Prikowitsch's call completion application thus includes an “action determination module,” i.e., software that allows the user to define actions to complete the call because it is a “computer program product” made up of software instructions executable by the processor on the user's terminal device. Ex-1002 ¶84; Ex-1049 ¶6, Cls. 15, 22-24.

- e. **Elements 1[d(ii)]/11[e(ii)]: wherein said plurality of call completion actions are selected according to one or more responses provided by said calling party through a graphical user interface of said calling party device,**

Prikowitsch teaches Elements 1[d(ii)]/11[e(ii)]. Ex-1002 ¶85. Prikowitsch further explains that the calling party provides the call completion actions through responses via their device's “graphical user interface with appropriate menu control.” Ex-1011, 4:17-25; *see also id.*, Claim 5. For example, the caller may “select[] a profile of announcement” for the scenario where “subscriber [is] busy,”

and a responsive action to “return call reminder if busy.” Ex-1011, 12:24-28. The call completion actions are thus selected according to the user’s response on the calling party device’s graphical user interface. Ex-1002 ¶85.

- f. **Elements 1[d(iii)]/11[e(iii)]: wherein said call completion actions comprise [1] setting a reminder to call back said called party at a configurable time, [2] recording media data on said calling party device, [3] transmitting said media data to a called party device, [4] transmitting a missed call alert to said called party device, [5] transmitting a notification of said detected incomplete call to said called party device, [6] transmitting a notification on availability of said called party, [7] transmitting said media data to a social networking platform, [8] transmitting an automated message requesting said called party to call back said calling party when available, and [9] any combination thereof; and**

Prikowitsch teaches Elements 1[d(iii)]/11[e(iii)], specifically at least the call completion actions labeled [1]-[3]. Ex-1002 ¶86. This claim element lists the “one or more of a plurality of call completion actions” or “any combination thereof” that are received by the call completion application in Elements 1[d(i)]/11[e(i)], such that it is only necessary to receive one of these call completion actions to satisfy this claim. *Id.*

For example, Prikowitsch teaches that the call completion actions comprise at least “[1] setting a reminder to call back said called party at a configurable time” by making “calendar entries relating to return calls” (Ex-1011, 7:9-15), or selecting a

“return call reminder if busy” action on the user’s interface. *Id.*, 12:24-28. An “appointment” may be created stating “return call to No xxx required.” *Id.*, 13:14-15. Prikowitsch’s calendar appointment is a reminder to complete the call that was unanswered due to the busy called party by calling the party later. Ex-1002 ¶87.

Prikowitsch also teaches call completion actions comprising “[2] recording media data on said calling party device” and “[3] transmitting said media data to a called party device.” Ex-1002 ¶88. Specifically, the user may configure the call completion application to transmit text, “multimedia messages and/or” “individual recorded voice messages” to the called party. Ex-1011, 5:28-34, 7:9-14. Prikowitsch’s multimedia or voice messages are the claimed recording and transmitting media data call completion actions because they are individual recorded messages sent to the called party to complete the unanswered call. Ex-1002 ¶89; Ex-1048, 2:56-64, 5:4-10; Ex-1049 ¶5; Ex-1050 ¶¶6, 12; Ex-1051, 3:58-63, 4:9-14.

- g. Element 1[e]: triggering execution of said received one or more of said call completion actions by said call completion application on said calling party device based on one or more of action execution criteria for said completion of detected incomplete call.**

Element 11[f]: an action execution module configured to trigger execution of said received one or more of said call completion actions based on one or more of action execution criteria one or more responses selected by said calling party for said completion of said detected incomplete call.

Prikowitsch teaches Elements 1[e] and 11[f]. Ex-1002 ¶90. Prikowitsch's call completion application "contains the logic for how to react to respective events" (Ex-1011, 6:1-3), that triggers the caller's responsive actions (i.e., "call completion actions") to complete an incomplete call to be executed, by sending "individual announcements," implementing "diversions and/or forwarding operations," sending "ready-made SMS/MMS/voice messages," generating "appropriate announcements," and/or making "calendar entries relating to return calls." *Id.*, 7:9-15.

The actions are executed based on "action execution criteria," which is the user-prescribed actions to be executed depending on the reported status information. Ex-1011, Cl. 5. For example, when the reported status indicates that the called party is busy, the calling party's defined actions or profile (i.e., configurable criteria) linked to the "busy" event (e.g., call forwarding operations) are executed to complete the call. *Id.*, 13:5-15. In such a case, "busy" is an example of action execution criteria

because it sets out what the application will do to execute the selected call completion action “forwarding.”⁹ Ex-1002 ¶91.

A POSITA would have understood that Prikowitsch’s call completion application includes an “action execution module,” i.e., software that triggers execution of the call completion actions on the caller’s device because it is a “computer program product” made of software instructions executable by the device’s processor to react to the reported call status. Ex-1002 ¶92; Ex-1049 ¶¶6, 27, Claims 15, 22-24.

2. Dependent Claims 2, 5, 8-10, 12, 15, and 17-19

- a. Element 12[a]: The computer system of claim 11, wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events,**

Prikowitsch teaches Element 12[a]. Ex-1002 ¶93. Prikowitsch’s incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events for the same reasons explained in Section XII.A.1.c.

⁹ This is similar to the ’227 Patent. *See* Ex-1001, 8:49-53 (“The action execution criteria are a set of factors that determine an appropriate method for executing a call completion action, for example, transmitting a message to the called party device.”).

- b. Claim 2/Element 12[b]: [The computer implemented method of claim 1/The computer system of claim 11,] wherein said events comprise said called party being busy, said called party device being in an out of coverage area, said called party device being unreachable, said called party device being switched off, network congestion, and said call not being answered by said called party.**

Prikowitsch teaches Claim 2 and Element 12[b], which list the “one or more plurality of events” in Elements 1[c]/12[a] that cause a call to not be connected to a called party device. Ex-1002 ¶94. Thus, this limitation is met if at least one of the events in Claim 2/Element 12[b] occurs. Prikowitsch teaches that the reported status may include “call status” of whether the call was incomplete. A POSITA would have understood that events that could cause an incomplete call include if the called party is: busy (Ex-1011, 4:15 (“line is busy”)); out of coverage or switched off (Ex-1011, 3:11-15, 4:14-15 (“login status of the called terminal device”)); unreachable (Ex-1011, 1:13, 5:33 (“subscriber is unavailable”)); network congestion (Ex-1011, 3:13-15 (“availability of the network or resource availability”)); or simply not answered. *See also* Ex-1011, 2:13-18, 3:5-8, 13:5-9; Ex-1002 ¶95; Ex-1051, 3:44-55.

c. Claims 5 and 15

- (1) Elements 5[a]/15[a]: [The computer implemented method of claim 1/The computer system of claim 11], wherein said action execution criteria comprise configuration of said call completion actions on said calling party device,**

Prikowitsch teaches Elements 5[a]/15[a]. Ex-1002 ¶96. Prikowitsch teaches that the action execution criteria comprises configuration of the called completion actions on the calling party device. Specifically, the call completion application software installed on the calling party's device, allows the caller to implement and prescribe certain responsive actions (i.e., action execution criteria) for the application to execute to complete the call based on reported call status and events (e.g., the called party device is busy). Ex-1011, 5:19-25.

- (2) Elements 5[b]/15[b]: one of a presence and an absence of one or more of a message box and a messaging application for receiving media data on one of a network account of said called party and a called party device,**

Prikowitsch teaches Elements 5[b]/15[b]. Ex-1002 ¶97. Prikowitsch teaches that the action execution criteria comprises the presence of a message box for receiving media data on the called party's device. Specifically, Prikowitsch's "memory unit" "associated with the called party device" includes a "recording unit, a telephone answering machine or an electronic memory" and "may also be a buffer integrated in a communication network" so that messages may be transmitted at a

later time if the called party is not “logged in or available.” Ex-1011, 4:1-8. Prikowitsch’s telephone answering machine associated with the called party device is message box for receiving media data. Ex-1002 ¶97. A POSITA would have understood that the presence of a telephone answering machine for receiving media data on the called party device is a factor used by the application to determine the appropriate method for executing a call completion action such as whether media data like a text/audio/video message can be sent to the called party to complete the call. *Id.*; *see also* Ex-1049 ¶28.

(3) Elements 5[c]/15[c]: one of a presence and an absence of a data connection from said calling party device to a network,

Prikowitsch teaches Elements 5[c]/15[c]. Ex-1002 ¶98. Prikowitsch teaches that the action execution criteria comprises a data connection from the calling party device to a network. For example, “network services required for the application to work are signaled to the” calling party’s device in real time using a server. Ex-1011, 6:6-9. Activation of the call completion application requires communication, or a data connection between the device and the “subscription/application server.” *Id.*, 11:22-25. The network connecting the server and terminal devices is annotated in yellow in Figure 4 below. A POSITA would have understood that the presence of a data connection from the calling party device to a network is a factor used by the application to determine the appropriate method for executing a call completion

action such as whether a text/video message or announcement can be sent to the called party to complete the call. Ex-1002 ¶¶99; Ex-1050 ¶¶19-20.

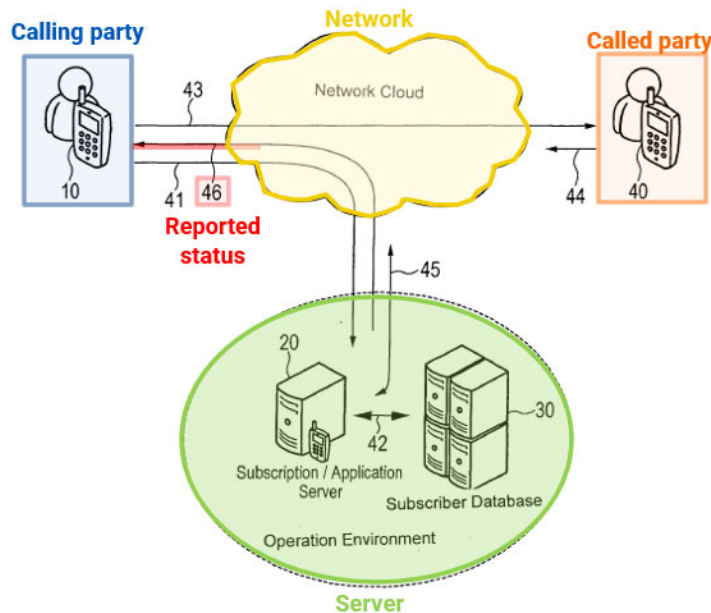


Fig. 4

(4) **Elements 5[d]/15[d]: one of a presence and an absence of a messaging service in a network component of said called party,**

Elements 5[e]/15[e]: one of a presence and an absence of a messaging service in a network component of said calling party,

Prikowitsch teaches Elements 5[d]/15[d] and 5[e]/15[e]. Ex-1002 ¶100. Prikowitsch teaches that the action execution criteria comprises a presence of a messaging service in a network component of the called party. Specifically, Prikowitsch’s call completion application of the calling party allows the sending of “ready-made SMS/MMS/voice messages” to the called party. Ex-1011, 7:13. A

POSITA would have understood that in order to perform the stated “sending of” messages, a messaging service within the network that connects to the called party would be used. Ex-1002 ¶100. Moreover, Prikowitsch’s memory unit includes an answering machine and “buffer integrated in a communication network” to transmit the messages at a later time if the called party is not “logged in or available.” Ex-1011, 4:1-8. A POSITA would have understood this capability to require the presence of a messaging service in the network component of both the called party and calling party, which would be a factor used by the application to determine the appropriate method for executing a call completion action such as whether a text or video message can be sent to the called party to complete the call. Ex-1002 ¶100.

(5) Elements 5[f]/15[f]: reach of said messaging service to deliver said media data to one of said network component of said called party and said called party device,

Prikowitsch teaches Elements 5[f]/15[f]. Ex-1002 ¶101. Prikowitsch teaches that the action execution criteria includes the reach of the messaging service¹⁰ to deliver the media data to the called party’s network component or device. Specifically, Prikowitsch’s action execution criteria includes reach because it determines whether it is possible to deliver a message to the called party based on

¹⁰ A POSITA would have understood the “reach” to deliver said media data as the messaging service’s availability to transmit the media data. *Id.*

the “quality or availability of a radio link.” Ex-1011, 3:20. A POSITA would have understood that the reach of the messaging service (e.g., the quality and availability of a radio link) is a factor used by the application to determine whether a text or video message can be sent to the called party to complete the call. Ex-1002 ¶¶101, 32-34; Ex-1049 ¶28.

(6) Elements 5[g]/15[g]: network options provided to said calling party device and said called party device by said network to which said calling party device and said called party device are connected, and

Prikowitsch teaches Elements 5[g]/15[g]. Ex-1002 ¶102. Prikowitsch teaches that the action execution criteria includes network options provided to the calling party device and the called party device by the network to which the devices are connected. Specifically, Prikowitsch teaches that network status, availability, and overload are factors used to determine the appropriate method for executing a call completion action. Ex-1011, 3:17-23. For example, Prikowitsch’s memory unit may be “a buffer integrated in a communication network” that allows transmission of the calling party’s messages at a later time if the called party is not logged into the network or available. *Id.*, 4:4-8. Because they are factors used by the application to determine the appropriate method of completing the incomplete call by sending the message over the network immediately or delayed, the network options are action execution criteria. Ex-1002 ¶102.

(7) Elements 5[h]/15[h]: call completion preferences configured by said call completion application on said calling party device.

Prikowitsch teaches Elements 5[h]/15[h]. Ex-1002 ¶103. Prikowitsch teaches that the action execution criteria includes call completion preferences configured by the calling party device. Specifically, Prikowitsch's calling party defines call completion preferences on their device for the application to execute the described action if a call is incomplete (Ex-1011, 7:4-15), which are saved in an appropriate user "profile on the server of the network itself." *Id.*, 6:24-30.

d. Claims 8/17: [The computer implemented method of claim 1/The computer system of claim 11], wherein said media data comprises one of text data, audio data, video data, audiovisual data, image data, multimedia data, message data, and any combination thereof.

Prikowitsch discloses Claims 8 and 17. Ex-1002 ¶104. Prikowitsch discloses that the media data comprises at least text, audio, multimedia, and message data by transmitting media data comprising text, audio, multimedia, and message data such as "text messages and/or multimedia messages and/or voice messages." Ex-1011, 5:28-33.

- e. **Claims 9/18: [The computer implemented method of claim 1, further comprising determining/The computer system of claim 11, wherein said action execution module is further configured to determine] a mode of transmission of media data from said calling party device to a called party device via a network, by said call completion application on said calling party device based on one or more of said action execution criteria.**

Prikowitsch teaches Claims 9 and 18. Ex-1002 ¶105. Prikowitsch determines a mode of transmission of media data from the calling party device to a called party device via a network, by the call completion application on the calling party device based on one or more of the action execution criteria defined by the user. *See* Section XII.A.1.g. Specifically, Prikowitsch's call completion application executes the caller's defined responsive actions to complete an incomplete call, by sending "individual announcements," implementing "diversions and/or forwarding operations," sending "ready-made SMS/MMS/voice messages," generating "appropriate announcements," and/or making "calendar entries relating to return calls." Ex-1011, 7:9-15. The actions are executed by the application based on action execution criteria (i.e., user-defined responsive actions) depending on the reported status information. *Id.*, Cl. 5. For example, when the reported status indicates that the called party is busy, the calling party's defined actions or profile (i.e., configurable criteria) linked to the "busy" event (e.g., call forwarding operations) are used to complete the call. *Id.*, 13:5-15.

Prikowitsch teaches determining the “mode of transmission” of the media data based on the action execution criteria in the same manner as the ’227 Patent. Ex-1002 ¶106. The ’227 Patent states the “mode of transmission” is the “form” of media data that would be transmitted to the called party, such as “a voice message, a text message, a missed call alert,” or “a notification a call attempt”; and the way it is transmitted, for example, directly or through a voice short message server. Ex-1001, 9:3-16. Prikowitsch determines the appropriate form of media data based on the caller’s defined actions, for example, sending a text/voice message, announcement, or return call calendar entry if the called party is busy or unavailable. Ex-1002 ¶106. Moreover, Prikowitsch determines the appropriate way the media data is transmitted, for example, directly to the called party or through a buffer in the communication network for delayed transmission. Ex-1011, 4:5-8.

- f. Claims 10/19: [The computer implemented method of claim 1, further comprising monitoring/The computer system of claim 11, wherein said call detection module is further configured to monitor] said incomplete call by said call completion application on said calling party device as said incomplete call progresses from said incomplete call being initiated, said incomplete call being one of answered and rejected, and said incomplete call being terminated.**

Prikowitsch teaches Claims 10 and 19. Ex-1002 ¶107. Prikowitsch call completion application monitors the calling party device as the incomplete call progresses from being initiated, answered or rejected, and terminated. Specifically,

Prikowitsch begins monitoring the call when it is outgoing (i.e., *initiated*). Ex-1011, 3:17. If “the network sends a ‘Busy’ acknowledgement,” this *rejection* “event” is detected and signaled to the application on the calling party’s device “for further evaluation.” Ex-1011, 13:5-9. The user-defined “actions linked to the ‘busy’ event” are then performed (*Id.*, 13:11-12), when the application determines that the call is *terminated* because these actions end the call process. Ex-1002 ¶¶108, 39; Ex-1051, 3:41-55.

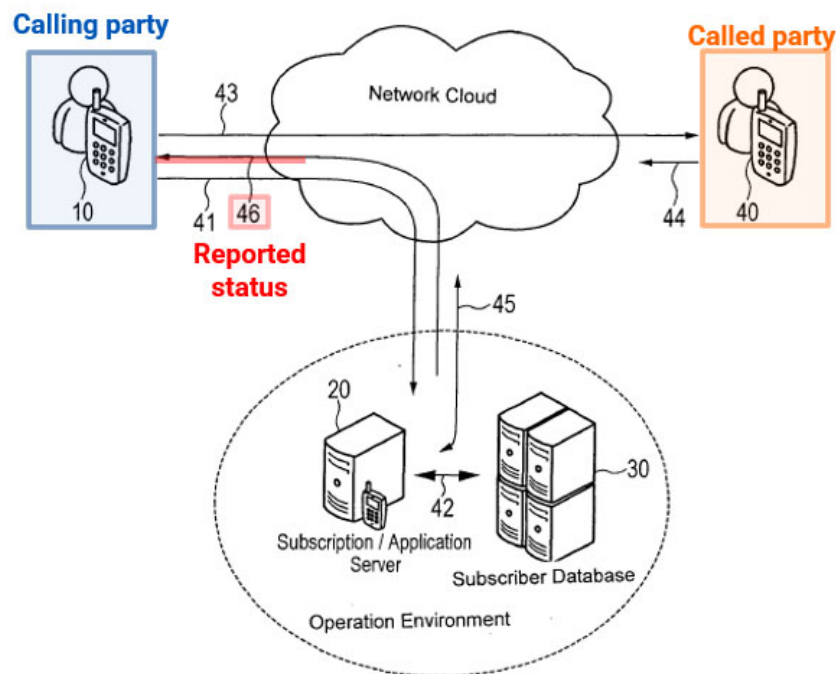


Fig. 4

B. Ground 2: Claims 3-4, 9, 13-14, and 18 are Rendered Obvious by Prikowitsch in View of Roujinsky

1. A POSITA would have been motivated to combine Prikowitsch and Roujinsky and had a reasonable expectation of success

In addition to the reasons set forth below, a POSITA would have been motivated to combine the teachings of Prikowitsch and Roujinsky (“Prikowitsch-Roujinsky”) and had a reasonable expectation of success in doing so because are systems and methods for implementing pre-defined actions in response to an incomplete call. For example, Prikowitsch allows the user to define individualized actions for responding to an incomplete call. Ex-1011, 1:22-2:2, 4:21-25, 5:21-24, 12:24-28. Prikowitsch defines an incomplete call as a call not answered due to the call status, network condition, or the recipient’s availability. Ex-1011, 3:5-8, 5:21-33, 7:4-15. Roujinsky similarly provides a call completion software that triggers “a user-defined action... to enable communication” after an unanswered call. Ex-1012, 10:28-11:1. Roujinsky registers an “uncompleted call” when the recipient is out of coverage, the recipient’s device is turned off or busy, or the call is of short duration. Ex-1012, 1:6-16, 16:9-14. When an “unanswered call” is detected, Roujinsky determines the appropriate transmission mode for the user-defined action and issues a SMS/MMS or voice message to the recipient about the call attempt. Ex-1012, 12:14-30.

A POSITA would have been motivated to combine Roujinsky's teachings of detecting an incomplete call based on call duration and determining the appropriate mode of transmission with Prikowitsch's system because they would have recognized a benefit of detecting an incomplete call across a variety of scenarios "regardless of whether they were missed or could not be received owing to communication failures, poor coverage and so on." Ex-1012, 15:13-15. Thus, a POSITA seeking to maximize call completion in a communication system by automatically registering unanswered telephone calls made over a communication channel and triggering user-defined actions, would have known and consulted both of these proposed solutions. Ex-1002 ¶¶109-111.

In the combined system, Prikowitsch's call application software would detect incomplete calls based on call duration and determine the appropriate mode of transmission for the user-defined action, as disclosed in Roujinsky, in order to ensure that the recipient receives notification of the caller's attempted call. Ex-1002 ¶112.

A POSITA would have had a reasonable expectation of success in combining these teachings of Prikowitsch and Roujinsky because each purports to solve these problems in similar and predictable ways, such as by monitoring incomplete calls and automatically triggering events that are individualized and defined by the caller in order to improve call completion of all types of unanswered calls without expensive equipment and central processing servers. Ex-1012, 15:5-15; Ex-1002

¶113. A POSITA would have understood that they could have combined these teachings with little or no change in their respective functions because they teach compatible systems. Ex-1002 ¶113.

2. Dependent Claims 3-4, 9, 13-14, and 18

- a. Claims 3/13: [The computer implemented method of claim 1/The computer system of claim 11], wherein said incomplete call is a call of a short duration that does not enable an intended communication to occur between said calling party and said called party.**

Prikowitsch-Roujinsky teaches Claims 3 and 13. Ex-1002 ¶114. Prikowitsch determines that a call is incomplete based on reported status information such as the call status, login status, and/or availability of the called party's device, and/or network status. Ex-1011, 3:11-15, Cl. 2. A POSITA would have understood that when a call is disrupted and cut short due to network status, the call application would consider the duration of the call to determine that the call was incomplete. Ex-1002 ¶¶114-115; Ex-1051, 3:52-55. This would have further been obvious because it was well known, as disclosed in Roujinsky.

Roujinsky discloses that the call completion software analyzes the call's record parameters and registers an "uncompleted call" based on whether there was "insufficient time elapsed after initiation of the call prior to hang-up to have allowed for the call to be answered." Ex-1012, 16:9-23. Based on the incomplete call, Roujinsky's call completion software performs a user-defined action. *Id.*

A POSITA would have been motivated to use Roujinsky's teachings to detect an incomplete call based on its short duration with Prikowitsch's system for the reasons described in Section XII.B.1, namely, to implement user-defined actions when a call is incomplete because insufficient time has elapsed for it to have been answered. Ex-1002 ¶116; Ex-1012, 15:13-15.

- b. Claim 4: The computer implemented method of claim 1, wherein said one or more of said call completion actions are received by said call completion application based on a duration of said detected incomplete call**

Claim 14: The computer system of claim 11, wherein said action determination module is further configured to receive said one or more of said call completion actions based on a duration of said detected incomplete call.

Prikowitsch-Roujinsky teaches Claims 4 and 14. Ex-1002 ¶117. Prikowitsch-Roujinsky teaches receiving call completion actions based on the duration of the detected incomplete call. As discussed in Ground 1 (*see* Section XII.A.1.d), Prikowitsch executes the caller's defined responsive actions when an incomplete call is detected. To the extent that Prikowitsch does not explicitly or inherently disclose receiving a defined responsive action based on the duration of an incomplete call, it would have been obvious in view of Roujinsky. Ex-1002 ¶117.

Roujinsky's software registers an incomplete call by "determining that insufficient time elapsed after initiation of the call" and "performs some user-defined action." Ex-1012, 16:9-23. Thus, Roujinsky receives the call completion action

based on the time elapsed after initiating the call by the caller. Ex-1002 ¶118. A POSITA would have been motivated to implement Roujinsky's call completion actions based on a duration of the incomplete call into Prikowitsch for the same reasons explained in Section XII.B.1—to ensure completion of “all types of unanswered calls.” Ex-1012, 15:13-15.

- c. **Claims 9/18: [The computer implemented method of claim 1, further comprising determining/The computer system of claim 11, wherein said action execution module is further configured to determine] a mode of transmission of media data from said calling party device to a called party device via a network, by said call completion application on said calling party device based on one or more of said action execution criteria.**

Prikowitsch-Roujinsky teaches Claims 9 and 18. Ex-1002 ¶119. Prikowitsch's call completion application determines the mode of transmission of media data from the calling party device to the called party device via a network, based on action execution criteria. *See* Section XI.A.2.e. This would have been further obvious in view of Roujinsky's software that compiles a “SMS notification” and sends it to the server to convey to the called party's device. Roujinsky applies the same principle when compiling other “types of message[s] sent over different networks such as text, email[,] and so on sent over the IP network and to WAP push messages.” Ex-1012, 17:24-31. Roujinsky conveys the caller's message to the server which then “composes a message in a different format for conveying to the called party's

[device] via a different network.” *Id.*, 18:23-32. Roujinsky also forwards the message “to the called party by any suitable additional network” in accordance “with a list of preference pre-established by the called party.” Ex-1012, 17:14-16. Therefore, Roujinsky’s software determines the appropriate type and form of the media data (i.e., mode of transmission) to convey to the called party, in the same way as the ’227 Patent. Ex-1001, 9:5-16; Ex-1002 ¶119.

A POSITA would have been motivated to implement Roujinsky’s teachings regarding mode of transmission with Prikowitsch’s call completion application to ensure that the called party, for example, receives a message that the caller “tried unsuccessfully to make contact.” Ex-1012, 11:18-20. A POSITA would have had a reasonable expectation of success in implementing Roujinsky’s mode of transmission into Prikowitsch because it is merely computer software code using conventional computer hardware. Ex-1002 ¶120.

C. Ground 3: Claims 1-2, 6, 8-12, and 17-19 are Rendered Obvious by Sar-Shalom

1. Independent Claims 1 and 11

- a. Elements 1[pre]/11[pre]: [A computer implemented method/A computer system] for completing an incomplete call made by a calling party to a called party, comprising**

Sar-Shalom teaches the preambles of Claims 1 and 11. Ex-1002 ¶121. Sar-Shalom teaches an “automatic messaging client launcher,” which initiates the

communication's device messaging client to "perform[] or complete[] selected tasks or processes" when the called party is unavailable. Ex-1013, Abstract, ¶25. Specifically, Sar-Shalom's messaging client allows the calling party to complete an incomplete call by, for example, easily sending messages to an unavailable call recipient. *Id.* ¶33. Sar-Shalom's automatic messaging client launcher is a method and/or system "implemented by hardware or by software on any operating system of any hardware or firmware," such as a computer. *Id.* ¶25; Ex-1002 ¶121.

- b. Element 1[a]: providing a call completion application executable by at least one processor on a calling party device;**

Element 11[a]: a non-transitory computer readable storage medium configured to store a call completion application on a calling party device;

Element 11[b]: at least one processor communicatively coupled to said non-transitory computer readable storage medium, said at least one processor configured to execute said call completion application on said calling party device; and

Sar-Shalom teaches Elements 1[a] and 11[a]-11[b]. Ex-1002 ¶122. Sar-Shalom teaches a call competition application executable by a processor on a calling party device. Specifically, Sar-Shalom's "automatic caller launcher" is a "method and/or system" that launches a messaging client in response to a call being answered or not answered. Ex-1013 ¶¶23, 53. The messaging client is launched "in accordance with a set of user-definable rules" and allows the user to define and select the

responsive action to be executed for an incomplete call. *Id.* ¶¶45, 46. For example, the messaging client is launched and may display “an input screen on the communication device” for the calling party to input the message content and/or other data to be sent. *Id.* ¶¶41, 58.

Sar-Shalom’s “automatic caller launcher” uses a processor to process the calling party’s actions to “complete” an unanswered call, independent of a preconfigured call completion service, such as voicemail. Ex-1002 ¶123. For example, Sar-Shalom’s caller launcher initiates the messaging client to send a SMS, EMS, or MMS message to the called party based on a trigger signaling that the call was incomplete but without the need of a voicemail. Ex-1013 ¶40. Sar-Shalom teaches that SMS messaging is an attractive communication option for many callers, and that MMS was expected to increase that trend. *Id.* ¶61. Sar-Shalom thus completes the call independent of a voicemail or preconfigured call completion service because it messages an unavailable destination device for the caller using commonly-adopted communication options, e.g., SMS or MMS, operating independently from a voicemail service. Ex-1002 ¶123.

Sar-Shalom’s messaging client with the integrated messaging launcher (i.e., software) is a call completion application on the calling party device. Ex-1002 ¶124. Sar-Shalom’s “automatic caller launcher” (and thus the messaging client and integrated messaging launcher) is “implemented by hardware or by software on any

operating system of any hardware or firmware or a combination thereof.” Ex-1013 ¶25. The method and system is “performed by a data processor, such as a computing platform for executing a plurality of instructions” (*id.* ¶25) on the calling party’s “communication device.” *Id.* ¶¶19, 36. The calling party device contains non-volatile memory for storing addresses and messages. Ex-1013 ¶¶39, 41. A POSITA would thus have understood that the automatic caller launcher is executed using a processor on the caller’s party device that communicates with memory, which also stores the call completion application. Ex-1002 ¶125; Ex-1053; Ex-1050 ¶¶19, 35.

c. Element 1[b]: detecting said incomplete call made by said calling party to said called party, by said call completion application on said calling party device,

Element 1[c]: wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events;

Element 11[c]: said call completion application on said calling party device, comprising:

Element 11[d]: a call detection module configured to detect said incomplete call made by said calling party to said called party

Sar-Shalom teaches Elements 1[b]-1[c] and 11[c]-11[d] by detecting an incomplete call made by the calling party to the called party. Sar-Shalom’s automatic messaging client launcher’s availability detector “monitors the call” (Ex-1013 ¶36) from the “time the ring tone is present until that call is answered or until a busy signal or any other indication of failure to complete the call is obtained,” to

determine whether the called device is available. *Id.* ¶38; *see also id.* ¶19. As shown in Figure 3, a determination is made whether the call recipient answers (S310 (yellow)). *Id.* ¶53. If the device is unavailable and the call is not answered, the call is detected as incomplete. Ex-1002 ¶126.

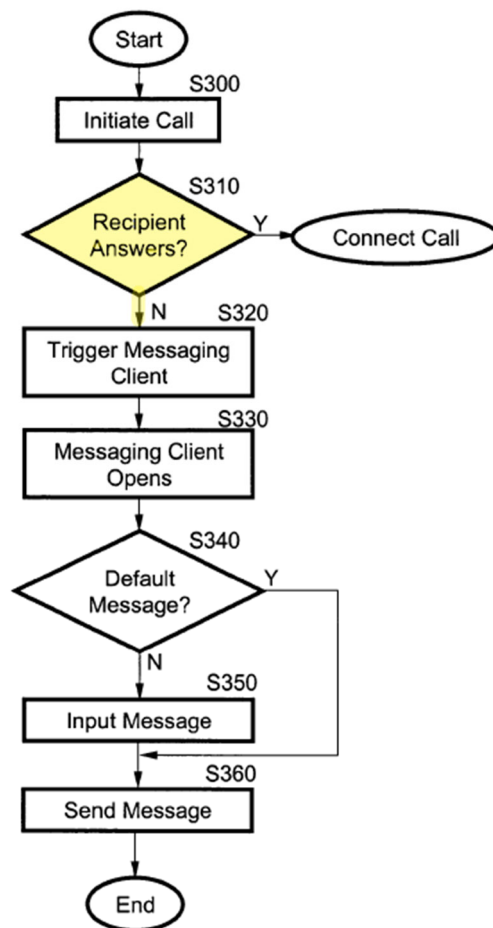


FIG. 3

- d. **Element 1[d(i)]: receiving one or more of a plurality of call completion actions to be performed by said call completion application on said calling party device to complete said detected incomplete call,**

Element 11[e(i)]: an action determination module configured to receive one or more of a plurality of call completion actions to be performed to complete said detected incomplete call,

Sar-Shalom teaches Elements 1[d(i)] and 11[e(i)]. Ex-1002 ¶127. Sar-Shalom teaches receiving a plurality of call completion actions to be performed to complete the detected incomplete call. Sar-Shalom's automatic messaging client launcher provides a "trigger signal" derived from "answer/no-answer" data to open the messaging client (S330) to send a message (S350). Ex-1013 ¶53. The messaging client displays a choice of responses on the user device's input screen (*id.* ¶¶41, 45) for the user to input "text, audio clips, video clips, still images, multimedia presentations and voice" for the SMS/EMS/MMS message. *Id.* ¶¶40, 45. The message may be standard or user-defined to include the "caller name, and the date and time the call was made." *Id.* ¶42. These actions are received to complete the detected incomplete call. Ex-1013 ¶¶23, 53.

These actions are performed by the call completion application on the calling party's device. As explained above, the communication device's messaging client displays "an input screen" on the user's device, "for user input of message content." Ex-1013 ¶41. A POSITA would have understood that Sar-Shalom's messaging

client includes an “an action determination module” because it is software (*id.* ¶25) that allows the user to configure the call completion actions to be performed to complete the detected incomplete call. Ex-1002 ¶128; Ex-1049 ¶6, Cls. 15, 22-24.

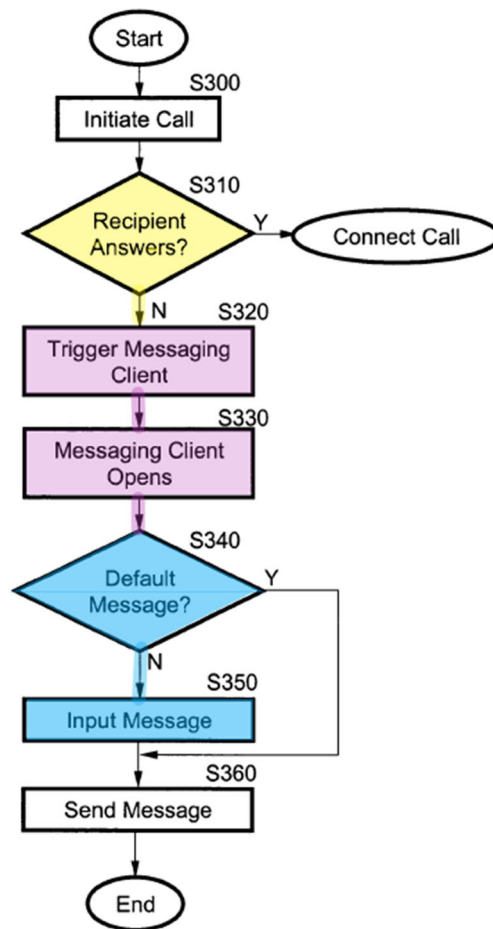


FIG. 3

- e. **Elements 1[d(ii)]/11[e(ii)]: wherein said plurality of call completion actions are selected according to one or more responses provided by said calling party through a graphical user interface of said calling party device,**

Sar-Shalom teaches Elements 1[d(ii)] and 11[e(ii)]. Ex-1002 ¶129. Sar-Shalom further explains that the calling party provides the call completion actions

through responses via their device's graphical interface. The calling party "is given a choice of responses" on their device screen to select such as "leaving an SMS or MMS message, leaving a voice message, or disconnecting." Ex-1013 ¶45. For example, the launched messaging client displays "an input screen on the communication device" for the calling party to input message content and/or other data to be sent to the called party using a user command. *Id.* ¶¶41, 58 ("input screen ... showing a blank or default message"). A POSITA would have understood that this "input screen" is part of a "graphical user interface" as claimed. Ex-1002 ¶129.

- f. **Elements 1[d(iii)]/11[e(iii)]: wherein said call completion actions comprise [1] setting a reminder to call back said called party at a configurable time, [2] recording media data on said calling party device, [3] transmitting said media data to a called party device, [4] transmitting a missed call alert to said called party device, [5] transmitting a notification of said detected incomplete call to said called party device, [6] transmitting a notification on availability of said called party, [7] transmitting said media data to a social networking platform, [8] transmitting an automated message requesting said called party to call back said calling party when available, and [9] any combination thereof; and**

Sar-Shalom teaches Elements 1[d(iii)] and 11[e(iii)], specifically at least call completion actions labeled [2]-[3].¹¹ Ex-1002 ¶130. Sar-Shalom ([3]) sends a "SMS,

¹¹ The call completion application must receive at least one of the call completion actions. *See supra* Section XII.A.1.f.

EMS, or MMS message” as a reply to the called party (Ex-1013 ¶50), comprising “text, audio clips, video clips, still images, multimedia presentations and voice.” *Id.* ¶¶40, 45. The message may be a standard or customized message that includes “the caller name, and the date and time the call was made.” *Id.* ¶42. Sar-Shalom’s audio, video, or multimedia message is recorded media ([2]) because the user can input a default or customized message using their voice. *Id.* ¶43 (“recording a voice message”). The media data is then sent to the calling party as a reply so that it is transmitted to the called party device. Ex-1013 ¶47; Ex-1002 ¶131; Ex-1048, 2:56-64, 5:4-10; Ex-1049 ¶¶5, 27-28; Ex-1050 ¶¶6, 12; Ex-1051, 3:58-63, 4:9-14.

- g. Element 1[e]: triggering execution of said received one or more of said call completion actions by said call completion application on said calling party device based on one or more of action execution criteria for said completion of detected incomplete call.**

Element 11[f]: an action execution module configured to trigger execution of said received one or more of said call completion actions based on one or more of action execution criteria one or more responses selected by said calling party for said completion of said detected incomplete call.

Sar-Shalom teaches Elements 1[e] and 11[f]. Ex-1002 ¶132. Sar-Shalom’s application triggers execution of the call completion actions based on action execution criteria for completion of the detected incomplete call. Sar-Shalom’s messaging initiator 120 detects that the called party communication device is unavailable and launches messaging client 130 “to apply the [user-definable] rules.”

Ex-1013 ¶46. Once the user-defined rules are applied and the message is customized by the user, the message is sent (Figure 3, S360 (green)). *Id.* ¶53; *see also id.* ¶47 (“the reply is sent to the unavailable destination device”). A POSITA would have understood that Sar-Shalom’s messaging initiator is an “action execution module,” i.e., software that triggers execution of the call completion actions on the caller’s device because it is a computer program product made of software instructions executable by the processor on the device. Ex-1002 ¶132.

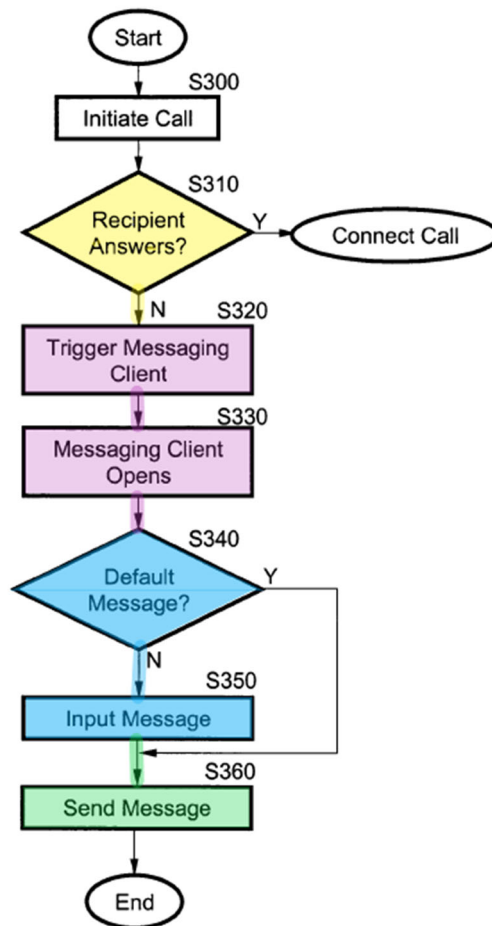


FIG. 3

The actions are executed based on action execution criteria. Ex-1002 ¶133. As explained above, once messaging initiator 120 detects that the called party's device is unavailable, messaging client 130 applies "the [user-definable] rules" to allow tailoring of the caller's message. Ex-1013 ¶¶46, 53. In such a case, "unavailable" is an example of action execution criteria because it sets forth what the application will do to execute the selected call completion action, such as implementing a customized message to the unavailable device. *See* Ex-1001, 8:49-53; Ex-1002 ¶133.

2. Dependent Claims 2, 6, 8-10, 12, and 17-19

- a. Element 12[a]: The computer system of claim 11, wherein said incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events,**

Sar-Shalom teaches Element 12[a]. Ex-1002 ¶134. Sar-Shalom's incomplete call is a call that is not connected to a called party device due to occurrence of one or more of a plurality of events for the same reasons explained in Section XII.C.1.c.

- b. Claim 2/Element 12[b]: [The computer implemented method of claim 1/ The computer system of claim 11,] wherein said events comprise said called party being busy, said called party device being in an out of coverage area, said called party device being unreachable, said called party device being switched off, network congestion, and said call not being answered by said called party.**

Sar-Shalom teaches Claim 2 and Element 12[b].¹² Ex-1002 ¶135. Sar-Shalom determines that the call is not connected due to the called party being busy, the called party device being out of coverage area, unreachable, or switched off, or the call not being answered. Specifically, the call is determined to be incomplete when there is a “busy signal detected” or if “an indication is received ... that the destination device is offline.” Ex-1013 ¶38. A POSITA would have understood that when the called party device is determined to be busy or offline, then the call would be incomplete because the device is out of coverage, unreachable, or switched off. Ex-1013 ¶¶36, 38; Ex-1002 ¶¶135-136. Sar-Shalom further teaches that the call is incomplete due to the call not being answered after a predetermined number of rings or connecting to a voicemail box. Ex-1013 ¶38.

¹² If at least one of the events in Claim 2/Element 12[b] occurs, these limitations are met. *See supra* Section XII.A.1.c.

- c. **Claim 6: The computer implemented method of claim 1, wherein said one or more of said call completion actions to be performed by said call completion application on said calling party device to complete said detected incomplete call is based on one or more of configurable criteria configured by said calling party.**

Sar-Shalom teaches Claim 6. Ex-1002 ¶137. Sar-Shalom bases the call completion actions to be performed on configurable criteria configured by the calling party. Messaging client 130 uses “user-definable rules” that include “various criteria” configured by the calling party on their communication device. Ex-1013 ¶46; *see also id.* ¶52 (“set and/or change preferences.”); Section XII.C.1.d. Specifically, messaging initiator 120 provides additional information “provisioned by the user” required by messaging client 130 to apply the rules so that the user can customize messages sent for different purposes. Ex-1013 ¶46. Therefore, the calling party configures the “call completion actions” by defining the actions to complete said detected incomplete call. Ex-1002 ¶137.

- d. **Claims 8/17: [The computer implemented method of claim 1/The computer system of claim 11], wherein said media data comprises one of text data, audio data, video data, audiovisual data, image data, multimedia data, message data, and any combination thereof.**

Sar-Shalom teaches Claims 8 and 17. Ex-1002 ¶138. Sar-Shalom teaches that the message includes media data like “text, audio clips, video clips, still images,

multimedia presentations and voice” via “SMS, EMS, or MMS message.” Ex-1013 ¶¶40, 45.

- e. **Claims 9/18: [The computer implemented method of claim 1, further comprising determining/The computer system of claim 11, wherein said action execution module is further configured to determine] a mode of transmission of media data from said calling party device to a called party device via a network, by said call completion application on said calling party device based on one or more of said action execution criteria.**

Sar-Shalom teaches Claims 9 and 18. Ex-1002 ¶139. Sar-Shalom determines a mode to transmit the media data to the called party via a network based on one or more of the action execution criteria. *See* Section XII.C.1.g. Specifically, Sar-Shalom’s messaging initiator 120 detects that the called party device is unavailable and launches messaging client 130 “to apply the [user-definable] rules.” Ex-1013 ¶46. For example, when the called party device “is unavailable the user is given a choice of responses, such as leaving an SMS or MMS message,” “voice message, or disconnecting without leaving any message.” *Id.* ¶45. Based on the calling party’s rules, the user may input the message content either manually, by selecting a defined message, or the message is sent “automatically.” *Id.* ¶¶41-42, 44. This is the same “mode of transmission” described in the ’227 Patent (Ex-1001, 9:5-16 (e.g., SMS)) because Sar-Shalom determines the appropriate “type” and “form” of the media data that the caller had configured to send. Ex-1002 ¶139.

- f. Claims 10/19: [The computer implemented method of claim 1, further comprising monitoring/The computer system of claim 11, wherein said call detection module is further configured to monitor] said incomplete call by said call completion application on said calling party device as said incomplete call progresses from said incomplete call being initiated, said incomplete call being one of answered and rejected, and said incomplete call being terminated.**

Sar-Shalom teaches Claims 10 and 19. Ex-1002 ¶140. Sar-Shalom monitors the incomplete call as it progresses from being initiated, answered or rejected, and terminated. Sar-Shalom's availability detector 110 "monitors the calls placed" by the calling party and "detects whether a destination device is unavailable" (Ex-1013 ¶20), by "monitor[ing] the call from the time the ringtone is present until that call is answered or until a busy signal or any other indication of failure to complete the call is obtained." *Id.* ¶38. For example, if the call is not "answered after a predetermined number of rings," or it "connects to a voicemail box," then the called party is determined to be unavailable. *Id.* The user-definable rules are then applied when it is determined that the call is terminated, which ends the call process. Ex-1002 ¶140.

D. Ground 4: Claims 3-5 and 13-15 are Obvious Over Sar-Shalom in View of Roujinsky

- 1. A POSITA would have been motivated to combine Sar-Shalom and Roujinsky and had a reasonable expectation of success**

In addition to the reasons set forth below, a POSITA would have been motivated to combine the teachings of Sar-Shalom and Roujinsky ("Sar-Shalom-

Roujinsky”) and had a reasonable expectation of success in doing so because each implements pre-defined actions in response to an incomplete call. For example, when Sar-Shalom detects that the called party device is unavailable (Ex-1013 ¶¶36, 38), its messaging client is launched to allow the calling party to define the type of message to send to the unavailable device. *Id.* ¶¶40, 45.

As explained above in Section XII.B.1, Roujinsky also automatically issues a “predefined message” to the recipient (Ex-1012, 12:14-30), in response to an incomplete call. *Id.*, 10:28-11:1. Roujinsky further determines the call completion action based on criteria about the incomplete call such as when the calling party device is “not within coverage or is engaged on the telephony channel, thus preventing the call from being completed.” Ex-1012, 16:18-23. When there is a network issue, Roujinsky sends a notification to the called party’s device as an SMS message “conveyed over the cellular network,” and allows “other types of message[s] sent over different networks such as text, email and so on sent over the IP network.” Ex-1012, 17:17-30.

A POSITA would have been motivated to combine Roujinsky’s teachings of determining the appropriate method for executing the user-defined actions based on network options and available messaging service with Sar-Shalom’s system for the benefit of considering network options and available messaging service when determining the appropriate method for executing the user-defined actions to

respond to the incomplete call “regardless of whether they were missed or could not be received owing to communication failures, poor coverage and so on.” Ex-1012, 15:13-15. A POSITA would have also been motivated to combine Roujinsky’s teachings of detecting an incomplete call based on call duration with Sar-Shalom’s system for the same reason. Ex-1002 ¶¶141-143. Thus, a POSITA seeking to maximize call completion in a communication system by automatically registering unanswered telephone calls made over a communication channel and triggering user-defined actions, would have known of and consulted both of these proposed solutions. *Id.* In the combined system, Sar-Shalom’s automatic client messaging launcher would determine the appropriate method for executing the user-defined actions based on network options, available messaging service, and call duration, as disclosed in Roujinsky, to allow the calling party to predefine additional responsive actions and increase incomplete call detection. Ex-1002 ¶144.

A POSITA would have had a reasonable expectation of success in combining these teachings of Sar-Shalom and Roujinsky because each purports to solve these problems in similar and predictable ways of monitoring incomplete calls and automatically triggering events that are caller-defined in order to improve call completion of all types of unanswered calls without expensive equipment and central processing servers. Ex-1012, 15:5-15. A POSITA would have understood that they

could have combined these teachings with little or no change in their respective functions because they teach compatible systems. Ex-1002 ¶145.

2. Dependent Claims 3-5 and 13-15

- a. Claims 3/13: [The computer implemented method of claim 1/The computer system of claim 11], wherein said incomplete call is a call of a short duration that does not enable an intended communication to occur between said calling party and said called party.**

Sar-Shalom-Roujinsky teaches Claims 3 and 13. Ex-1002 ¶¶146-148. Sar-Shalom's "availability detector 110 monitors the call" until an indication of failure occurs. Ex-1013 ¶38. Such a failure can include when "the call is not answered after a predetermined number of rings" or "if the call connects to a voicemail box." *Id.* A call answered by voicemail would be an incomplete call of short duration that does not enable intended communication between the parties. Ex-1051, 3:52-55.

Claims 3/13 are also taught by Roujinsky, as described in Section XII.B.2.a. A POSITA would have been motivated to combine Sar-Shalom-Roujinsky and had a reasonable expectation of success in doing so for the reasons described in Section XII.D.1.

- b. **Claim 4: The computer implemented method of claim 1, wherein said one or more of said call completion actions are received by said call completion application based on a duration of said detected incomplete call.**

Claim 14: The computer system of claim 11, wherein said action determination module is further configured to receive said one or more of said call completion actions based on a duration of said detected incomplete call.

Sar-Shalom-Roujinsky teaches Claims 4 and 14. Ex-1002 ¶¶149-150. For example, Sar-Shalom considers the duration of the call (i.e., predetermined number of rings or voicemail response) when determining that the call is incomplete or “if the call connects to a voicemail box.” Ex-1013 ¶¶36, 38. When the call is determined incomplete, messaging client 130 is launched so that the calling party may send a message to the called party device, thus completing a “call completion action.” Ex-1013 ¶36. The user is given a choice of responses on the device’s input screen such as to send a “SMS, EMS, or MMS message.” *Id.* ¶¶40, 41, 45. Messaging client 130 (the claimed “action determination module,” *see* Section XI.C.1.d) thus receives a call completion action based on the call’s duration being too short.

Claims 4/14 are also taught by Roujinsky, as described in Section XII.B.2.b. A POSITA would have been motivated to combine Sar-Shalom-Roujinsky and had a reasonable expectation of success in doing so for the reasons described in Section XII.D.1.

c. Claims 5 and 15

- (1) Elements 5[a]/15[a]: [The computer implemented method of claim 1/The computer system of claim 11], wherein said action execution criteria comprise configuration of said call completion actions on said calling party device,**

Sar-Shalom-Roujinsky teaches Elements 5[a]/15[a]. Ex-1002 ¶151. Sar-Shalom teaches action execution criteria comprising call completion actions configured on the caller's device. Messaging client 130 uses "user-definable rules" that include "various criteria" set by the calling party on their device. Ex-1013 ¶46. Specifically, messaging initiator 120 provides additional information "provisioned by the user" required by messaging client 130 to apply the rules. *Id.* This allows the user to customize messages sent for different purposes. Thus, the calling party configures the "call completion actions" by defining the factors that determine the appropriate method executing a call completion action in response to an incomplete call. *Id.*; Ex-1002 ¶151.

- (2) Elements 5[b]/15[b]: one of a presence and an absence of one or more of a message box and a messaging application for receiving media data on one of a network account of said called party and a called party device,**

Sar-Shalom-Roujinsky teaches Elements 5[b]/15[b]. Ex-1002 ¶¶152-153. Sar-Shalom's action execution criteria comprises the presence of a message box and messaging application on the called party's account and device. Specifically, Sar-

Shalom's availability detector considers whether the call "connects to a voicemail box," when determining whether the destination device is unavailable. Ex-1013 ¶38. When the called party device does not connect, messaging initiator launches the messaging client for the calling party to send a message to the unavailable device. *Id.* ¶¶38, 41.

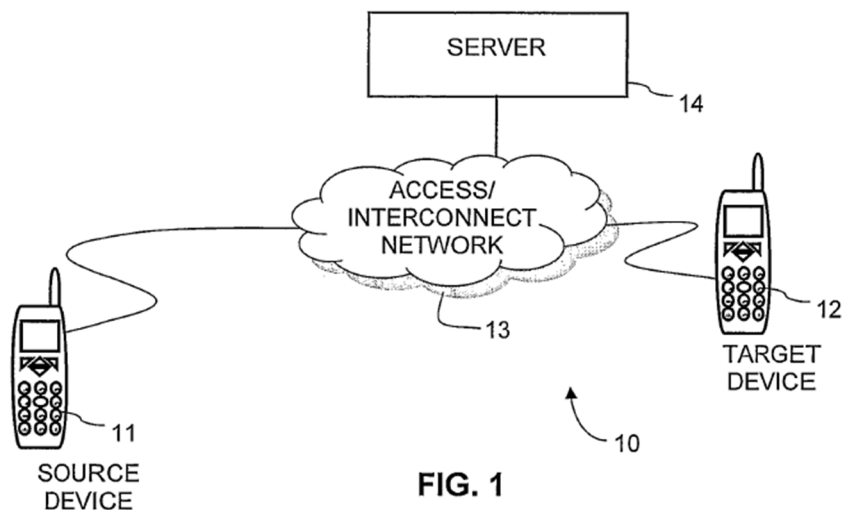
Similarly, Sar-Shalom's messaging initiator detects whether a calling party device has "messaging capabilities," such as a messaging application for receiving media data, like a land-line telephone. Ex-1013 ¶39. If the calling party device does not have messaging capabilities, messaging client is not launched thereby not sending a message to the called party from the calling party. *Id.*

(3) Elements 5[c]/15[c]: one of a presence and an absence of a data connection from said calling party device to a network,

Sar-Shalom-Roujinsky teaches Elements 5[c]/15[c]. Ex-1002 ¶154. Sar-Shalom-Roujinsky teaches the action execution criteria comprises the data connection from the calling party device to a network. Specifically, Sar-Shalom explains that the communication device includes cellular telephones, IP telephones, smart telephones and satellite telephones, "[s]ome fixed line telephone with SMS for wireline capabilities." Ex-1013 ¶37. Sar-Shalom explains that the availability detector accesses "telephone network signaling information ... to determine if a called device is available." Ex-1013 ¶49. A POSITA would thus have understood

that Sar-Shalom considers whether there is a data connection for the communication device to execute the automatic client message launcher. Ex-1002 ¶154.

A POSITA would have further found it obvious in view of Roujinsky. Ex-1002 ¶155. As shown in Roujinsky's Figure 1, a call completion system is implemented between a "source telephone 11 and a target telephone 12 interconnected via a wireless network 13." Ex-1012, 8:11-15. A POSITA thus would have found it obvious that the action execution criteria considers a data connection presence from a calling party device to a network in order to execute the call completion actions. Ex-1002 ¶155. A POSITA would have been motivated to implement Sar-Shalom's action execution criteria comprising Roujinsky's explicit teaching of a data connection presence from the calling party device to a network in order to direct suitable messages to a called party device. *Id.*; Ex-1012, 8:21-23.



(4) Elements 5[d]/15[d]: one of a presence and an absence of a messaging service in a network component of said called party,

Elements 5[e]/15[e]: one of a presence and an absence of a messaging service in a network component of said calling party,

Sar-Shalom-Roujinsky teaches Elements 5[d]/15[d] and 5[e]/15[e]. Ex-1002

¶156. Sar-Shalom teaches the action execution criteria comprises a messaging service in a network component of the called party and calling party. Sar-Shalom's messaging initiator detects whether the called party has "messaging capabilities" in order to determine the appropriate method of executing the call completion action. For example, messaging initiator determines whether the called party is a land-line telephone and refrains from launching messaging client. Ex-1013 ¶39. Thus, the action to be executed comprises determining the presence or absence of the messaging service in the called party and calling party's network component. Ex-1002 ¶156.

This would have been further understood as shown by Roujinsky. Ex-1002 ¶157. Roujinsky teaches that the "server" may compile a suitable notification and forward it to the called party by any "suitable additional network, possibly in accordance with a list of preferences pre-established by the called party." Ex-1012, 17:14-16. Similarly, the "server stores a list of precompiled messages and is responsive to a request from the calling handset for selecting one of these messages."

Id., 18:16-19. The message may be a pre-recorded voice message on a “voice server.” *Id.*, 18:19-21. A POSITA would have understood that the messaging service in a network component of the calling party is Roujinsky’s voice server that allows the calling party to access the messaging service. Ex-1002 ¶157. A POSITA would have been motivated to implement Sar-Shalom’s action execution criteria comprising Roujinsky’s explicit messaging service in a network in order to direct suitable messages to a called party device. *Id.*; Ex-1012, 8:21-23.

(5) Elements 5[f]/15[f]: reach of said messaging service to deliver said media data to one of said network component of said called party and said called party device,

Sar-Shalom-Roujinsky teaches Elements 5[f]/15[f]. Ex-1002 ¶158. Sar-Shalom-Roujinsky teaches that the action execution criteria comprises the reach of the messaging service to deliver the media data to the called party’s network component or device. Specifically, Sar-Shalom’s automatic message client launcher can be “switched on and off” by the party devices or the communications carrier. Ex-1013 ¶52. Sar-Shalom explains that the availability detector accesses “telephone network signaling information ... to determine if a called device is available.” Ex-1013 ¶49. When “an indication is received ... that the destination device is offline” then the call is determined to be incomplete. *Id.* ¶38. Sar-Shalom’s consideration of whether the called party is offline and unreachable shows that it considers the reach

of the messaging service when determining the appropriate method to complete the call to ensure that the caller can send a message to the unavailable called party. *Id.* ¶61; Ex-1002 ¶158.

It would have been further obvious in view of Roujinsky. Ex-1002 ¶159. Roujinsky teaches that when the calling device calls over “a first network via the first communication channel,” Roujinsky “maps the... address of the called party to a corresponding address on a second communication network that transports data over the second communication channel.” Ex-1012, 17:2-7. The address may be to a regular cellular telephone number allowing a SMS notification to be conveyed, or it may be an IP address allowing a notification to be sent over the packet network. Ex-1012, 17:2-7. Roujinsky’s action execution criteria considers the “reach” of the calling device’s messaging service by considering the availability of the communication channels to determine the appropriate method and network to deliver the message to the called party. Ex-1002 ¶159. A POSITA would have been motivated to include Roujinsky’s reach into Sar-Shalom’s action execution criteria for the same reasons stated in Section XII.D.1.

- (6) **Elements 5[g]/15[g]: network options provided to said calling party device and said called party device by said network to which said calling party device and said called party device are connected, and**

Sar-Shalom-Roujinsky teaches Elements 5[g]/15[g]. Ex-1002 ¶160. Sar-Shalom-Roujinsky teaches that the action execution criteria comprises the network options provided to said party devices. Sar-Shalom explains that the availability detector accesses “telephone network signaling information ... to determine if a called device is available.” Ex-1013 ¶49. A POSITA would have understood that Sar-Shalom’s accessed telephone network signaling information are available network options factors considered when determining what action to execute in response to an incomplete call (i.e., action execution criteria). Ex-1002 ¶160.

Moreover, a POSITA would have found this obvious, as disclosed in Roujinsky. Ex-1002 ¶161. Roujinsky considers the available network options and the network connected to by devices. Specifically, Roujinsky considers whether the calling party and the called party are “out of coverage,” “phone turned off,” experiencing “network problems,” or whether the called party’s device is busy. Ex-1012, 1:6-16. For example, Roujinsky determines that the calling party device is “not within coverage or is engaged on the telephony channel, thus preventing the call from being completed.” Ex-1012, 16:18-23. When there is a network issue, Roujinsky sends a notification to the called party’s device as an SMS message

“conveyed over the cellular network,” and allows “other types of message[s] sent over different networks such as text, email, and so on sent over the IP network.” Ex-1012, 17:17-30. Thus, a POSITA would have understood that the network connection options are factored into the action execution criteria when determining which user-defined action should be executed in response to the incomplete call. Ex-1002 ¶161.

(7) Elements 5[h]/15[h]: call completion preferences configured by said call completion application on said calling party device.

Sar-Shalom-Roujinsky teaches Elements 5[h]/15[h]. Ex-1002 ¶162. Sar-Shalom teaches the action execution criteria comprises call completion preferences. The communication device has a “provision section” allowing the calling party to “set and/or change preferences.” Ex-1013 ¶52. Messaging client 130 further applies “user-definable rules” that include “various criteria” set by the calling party on their device. Ex-1013 ¶46. Specifically, messaging initiator 120 provides additional information “provisioned by the user” required by messaging client 130 to apply the rules. *Id.* This allows the automatic messaging client launcher to execute call completion actions based on the “call completion preferences” that the calling party defined. Ex-1002 ¶¶162-164.

XIII. THE BOARD SHOULD NOT USE ITS DISCRETION TO DENY INSTITUTION UNDER *FINTIV*

The Board should decline any request by PO to exercise discretion to deny institution under 35 U.S.C. §314(a). While Director Vidal’s June 21, 2022 Guidance made clear that “*Fintiv* is limited to facts of that case,” for completeness, Petitioner addresses the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). As explained below, the six factors set out in *Fintiv* do not justify denying institution.

As an initial matter, there is no litigation currently pending against Co-petitioner Google. The ’227 Patent is asserted against Co-petitioner Samsung but not Co-petitioner Google. It is also asserted against non-party TCL in the *TCL* litigation, which is currently stayed. Accordingly, none of the *Fintiv* factors that depend on actions or activities of a petitioner in a co-pending litigation apply in any respect to Google. When each of these factors is weighed against Co-petitioner Google, they strongly weigh against denial. Accordingly, the Board should decline to exercise its discretion under 35 U.S.C. §314(a).

The **first *Fintiv* factor** applied against Co-petitioner Samsung alone is neutral here because Samsung has not yet moved to stay the district court proceedings pending IPR. Samsung may seek to stay the proceedings at a later date, and Petitioner will seek leave to submit a Preliminary Reply to address any post-filing

developments in this regard, as necessary. Regardless, the PTAB will not infer how the district court would rule should a stay be requested. *See, e.g., Hulu LLC v. SITO Mobile R&D IP, LLC et al.*, IPR2021-00298, Paper 11 at 10-11 (PTAB May 19, 2021). Additionally, the *TCL* litigation involving the '227 Patent is stayed pending service of TCL under the Hague Convention, which will likely occur around February 2024. Ex-1022. Accordingly, this factor is neutral as to the *Samsung* litigation. And in view of the lengthy stay in the *TCL* litigation, this factor weighs against denial.

For the **second *Fintiv* factor** applied against Co-petitioner Samsung alone, the district court has set a date to begin jury selection of October 28, 2024, approximately a year in the future. Even assuming that this date set about a year in the future holds, its timing does not tip in favor of denying the petition in this case. *See, e.g., Apple Inc. v. Koss Corp.*, IPR2021-00305, Paper 14 at 13 (PTAB June 3, 2021). Further, Samsung filed a Rule 12(c) motion for judgment on the pleadings under 35 U.S.C. §101 on September 20, 2023 (*Samsung Electronics Co., Ltd. et al.*, 2:22-cv-00462, D.I. 42 (E.D. Tex. Sept. 20, 2023)) and a motion to transfer on October 13, 2023 (*id.*, D.I. 46 (Oct. 13, 2023) (filed under seal)). The estimated trial date may therefore get extended, if the case is not dismissed entirely. Petitioner will notify the Board of any Court orders regarding the motion for judgment and motion to transfer, and expects to request a preliminary reply to address *Fintiv* based on

subsequent developments. In addition, given the pending stay in the *TCL* litigation, the timing of trial with respect to *TCL* cannot be predicted at this time but is likely to occur after a final decision here. As such, the *Samsung* trial date weighs against denial.

The **third *Fintiv* factor** applied against Co-petitioner Samsung alone, weighs strongly against denial. There has been very little activity in the case. Claim construction briefing has not yet begun. No depositions have yet been taken and expert discovery has not begun. There have been no substantive orders in the case, and the most cost intensive period in the district court case will likely occur around or after the institution decision. This alone weighs against denial. *See, e.g., Hulu*, Paper 11 at 13 (“We agree with Petitioner that the district court proceeding remains at the early stages, and a significant portion of work still remains to be done in the district court proceeding.”); *Skechers U.S.A., Inc. v. Nike, Inc.*, IPR2021-00160, Paper 10 at 12-13 (PTAB May 19, 2021) (“[N]either party has informed us that the District Court has undertaken a Markman hearing or entered a claim construction order. ... [T]his factor weights against exercising our discretion.”). Moreover, there have been no development in the *TCL* litigation, which is stayed. This factor thus weighs against denial.

The **fourth *Fintiv* factor** also weighs against denial. The *Samsung* litigation is in the early stages and the *TCL* litigation is in its infancy and stayed. Co-petitioner

Google is not a party to either litigation, so this IPR is thus the only forum in which Google can present its invalidity challenge. This factor thus weighs against denial.

On the **fifth *Fintiv* factor**, the Board should give little weight to the fact that Co-petitioner Samsung and PO are the same parties as in one of the relevant district court proceedings. Here, Co-petitioner Google and the defendants (Samsung and non-party TCL) in the parallel litigations are not the same parties. Moreover, Co-petitioner Samsung is not a party to the *TCL* litigation. And Co-petitioner Google is not a party to either litigation. Therefore, this factor weighs against discretionary denial.

This petition presents “compelling merits” under the **sixth *Fintiv* factor**, which further weigh against discretionary denial. Where the Board “determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” USPTO Memorandum, Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings with Parallel District Court Litigation (June 21, 2022). The merits of the Petition are especially compelling here. For example, two references—Prikowitsch and Sar-Shalom—each render obvious independent Claims 1 and 11, along with the majority of the dependent claims, including the “call completion actions,” which PO relied on during prosecution to overcome the prior art. Ex-1004, 170-172, 186.

Taken together, holistically, the *Fintiv/NHK* factors strongly weigh against denial.

XIV. CONCLUSION

For the reasons above, Petitioner requests institution of IPR for Claims 1-6, 8-15, and 17-19 of the '227 Patent based on each of the grounds specified in this Petition.

Respectfully Submitted,

/s/ Ben Haber
Ben Haber (Reg. No. 67,129)

CERTIFICATE OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24(d), Petitioner certifies that this petition includes 13,998 words, as measured by Microsoft Word, exclusive of the table of contents, mandatory notices under § 42.8, certificates of service, word count, and exhibits.

CERTIFICATE OF SERVICE (37 C.F.R. § 42.6(e)(1))

The undersigned hereby certifies that the above document was served on December 5, 2023, by filing this document through the Patent Trial and Appeal Board P-TACTS System, as well as delivering a copy via express mail upon the following attorneys of record for the Patent Owner and Petitioner:

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