

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD.,
SAMSUNG ELECTRONICS, AMERICA, INC., and GOOGLE LLC,

Petitioners

v.

CERENCE OPERATING COMPANY,

Patent Owner

Case IPR2024-00978

U.S. Patent No. 7,395,078

Petition for *Inter Partes* Review of

U.S. Patent No. 7,395,078

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PETITIONERS' EXHIBIT LIST

Exhibit No.	DESCRIPTION
1001	U.S. Patent 7,395,078 (“’078Pat”)
1002	Declaration of Mark Lanning (“ <i>Lanning</i> ”)
1003	Curriculum Vitae of Mark Lanning
1004	File History of U.S. Patent 7,395,078
1005	Canadian Patent CA2275828C (“ <i>Dolan</i> ”)
1006	U.S. Publication 2004/0073423A1 (“ <i>Freedman</i> ”)
1007	U.S. Patent 5,887,254 (“ <i>Halonen</i> ”)
1008	Excerpt from The New Oxford American Dictionary (2001) (“ <i>New Oxford American Dictionary</i> ”)
1009	U.S. Patent 5,870,427 (“ <i>Tiedemann</i> ”)
1010	U.S. Patent 6,081,724 (“ <i>Wilson</i> ”)
1011	U.S. Patent 5,963,548 (“ <i>Virtanen</i> ”)
1012	U.S. Patent 5,953,322 (“ <i>Kimball</i> ”)
1013	Excerpts from Computer Dictionary (4th ed. 1999) (“ <i>Computer Dictionary</i> ”)
1014	RESERVED
1015	RESERVED
1016	Cover Pleading of Plaintiff Cerence Operating Company’s Disclosure of Asserted Claims and Infringement Contentions, Dated March 11, 2024.

Exhibit No.	DESCRIPTION
1017	Docket Control Order from <i>Cerence Operating Company v. Samsung Electronics Co., LTD, et al.</i> , No. 2:23-cv-0482-JRG-RSP (ECF 029) (E.D. Tex. Apr. 16, 2014)

I. INTRODUCTION

Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., (collectively, “Samsung”) and Google LLC (collectively, “Petitioners”) request *inter partes* review (“IPR”) of claims 1-17 (“Challenged Claims”) of U.S. Patent No. 7,395,078 (“the ’078 patent”).

II. GROUNDS FOR STANDING

Petitioners certify that the ’078 patent is available for IPR, and that Petitioners are not barred or estopped from requesting IPR to challenge the claims on the grounds herein.

III. STATEMENT OF PRECISE RELIEF REQUESTED FOR EACH CLAIM CHALLENGED

Petitioners respectfully request review and cancellation under 35 U.S.C. §311 of the Challenged Claims in view of:¹

¹ Petitioners do not concede that any Challenged Claims satisfy other requirements for patentability that cannot be raised in IPR, including 35 U.S.C. §§101 and 112.

Ground	Claims	Basis
1A	1-3, 8-11	§103: <i>Dolan</i>
1B	1, 4-7	§103: <i>Dolan</i> + <i>Freedman</i>
2A	12, 15-17	§103: <i>Dolan</i> + <i>Halonen</i>
2B	12-14	§103: <i>Dolan</i> + <i>Halonen</i> + <i>Freedman</i>

As shown below, each reference pre-dates the '078 patent's earliest purported priority date (April 20, 2004), but Petitioners do not concede that this priority date is correct and reserve the right to dispute it.

Reference	Date	Pre-AIA Prior Art at Least Under
CA2275828C (" <i>Dolan</i> ") (EX1005)	02/19/2000 (publication date)	§102(b)
US2004/0073423A1 (" <i>Freedman</i> ") (EX1006)	10/11/2002 (filing date) 04/15/2004 (publication date)	§§102(a), 102(e)
US5,887,254 (" <i>Halonen</i> ") (EX1007)	03/23/1999 (publication date)	§102(b)

IV. OVERVIEW OF THE '078 PATENT

The '078 patent relates to "[a] method of sending a voice message via a mobile communication device" comprising "receiving an utterance from a user of the mobile communication device," "generating a non-text representation of the received utterance," "inserting the non-text representation into a body of a text

message,” and “sending the text message over a wireless messaging channel from the mobile communication device to a recipient’s device.” ’078Pat, Abstract. The method involves “sending and receiving spoken or audio information over the SMS² network available in cellular phones.” *Id.*, 3:33-35. The method can use a “phonetic recognition algorithm in the phone” to generate a non-text representation of a desired message or utterance spoken by the user into a cellular phone. *Id.*, 3:36-38. Alternatively, “other algorithms could be used which simply perform compression without performing any recognition.” *Id.*, 6:56-58. For example, “instead of using a phoneme recognizer, a vocoder could be used to generate the compressed representation and then that compressed representation would be inserted into the body of the SMS message. In other words, ***any algorithm that produces a non-text representation suitable for sending over SMS or another non-voice channel could be employed.***” *Id.*, 6:58-64.³ In view of these, the ’078 patent discloses inserting into an SMS message a “stored phoneme string” or a vocoder-generated “compressed representation.” *Id.*, 4:55-59, 6:58-64. The ’078 patent also describes programming

² SMS, which stands for Short Message Service, is a text messaging service, and SMS messages were and continue to be a common form of text messaging. *Lanning* ¶36.

³ All emphases/annotations/color are added unless noted otherwise.

an SMS application “to generate a sequence of multiple SMS messages to handle longer utterances for which the non-text representation will not fit into the body of a single message.” *Id.*, 6:15-18.

On the receiving end, an SMS application in the cellular phone “processes the message for presentation to the user.” *Id.*, 5:59-62. “A flag within the received SMS message identifies the contents of the SMS message” as a non-text representation that is “processed by the synthesizer to generate an audio signal.” *Id.*, 5:62-65. The non-text representation is passed “to a synthesizer 220 within the cell phone, along with any stored parameters which were supplied to control synthesizer 220 and the way it generates the sounds.” *Id.*, 6:2-5. “The synthesizer plays through the cell phone speaker the sequence of sounds” that represent the non-text representation. *Id.*, 6:10-12. “The SMS application on the recipient’s side of the connection would also need to be programmed to recognize that the received non-text representation is to be constructed by concatenating the contents of more than one SMS message.” *Id.*, 6:24-28.

The ’078 patent’s claims are directed, generally speaking, to methods and devices for *sending*, over a wireless messaging channel, a non-text representation of a user’s utterance in a body of a text message. In a divisional application that issued as U.S. Patent No. 8,081,993, which is the subject of concurrently filed IPR2024-00979, Applicant obtained claims directed, generally speaking, to methods and

devices for *receiving*, over a wireless messaging channel, a text-message containing a non-text representation of an utterance, and synthesizing and playing an audio representation of the utterance.

V. OVERVIEW OF THE PRIOR ART

The prior art references analyzed in the grounds below are analogous to the '078 patent because they are within the same field of endeavor as the '078 patent and reasonably pertinent to one or more problems addressed by the '078 patent. *Lanning* ¶¶43-46. For example, like the '078 patent, *Dolan* is directed to techniques for compressing audio information such as a user's voice using electronic devices such as mobile phones and conveying such compressed audio information over a wireless communication channel using communication protocols such as SMS. *Id.* ¶44. *Freedman* is directed to the same type of phoneme-based techniques for compressing user speech and creating non-text representations of audio that is discussed in the '078 patent. *Id.* ¶45. *Halonen* provides implementation details of mobile phones used in systems disclosed in the '078 patent, *Dolan*, and *Freedman*. *Id.* ¶46.

A. *Dolan*

Dolan is titled "Using Discrete Message-Oriented Services to Deliver Short Audio Communications." *Dolan*, (54). *Dolan* discloses a method and system for delivery of short audio communications (such as a spoken phrase) to remote end-

user devices using discrete message-oriented services such as Short Message Service (SMS). *Id.*, 3:9-19, 10:27-11:5; *see also id.*, Abstract, 1:4-6, 4:18-26, FIGs. 1, 3. In a preferred embodiment, *Dolan* discloses “the end user device is conceived as a digital mobile telephone handset.” *Id.*, 4:12-13.

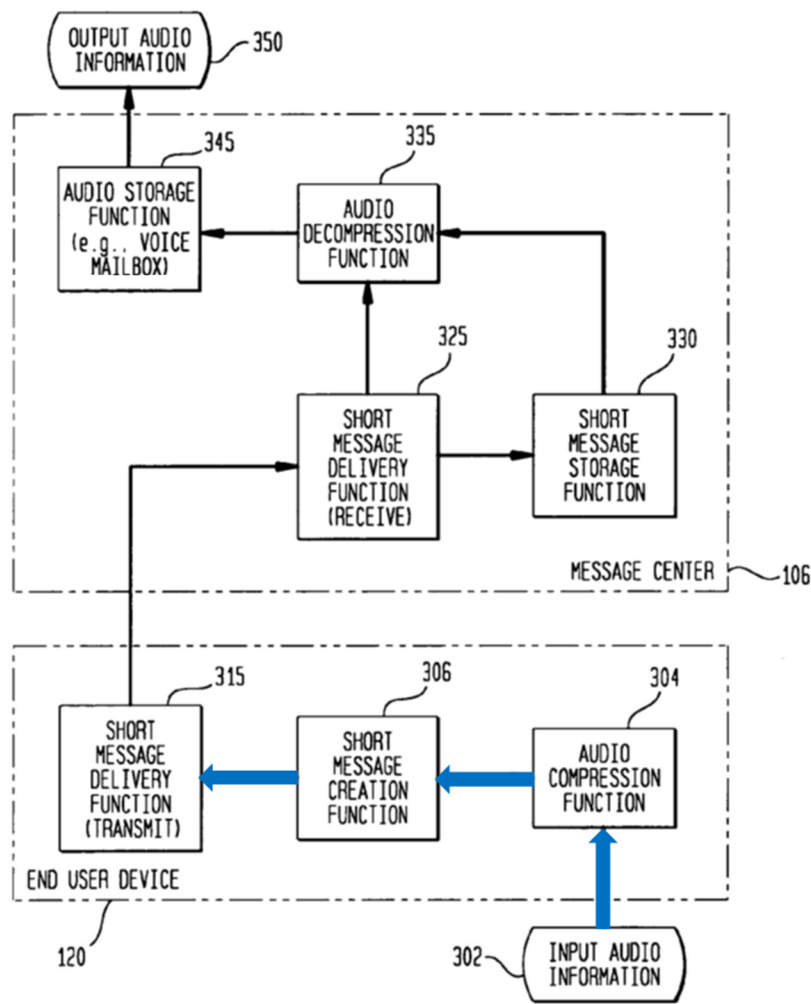
Dolan discloses compressing captured audio information. The compressed audio information is subsequently transmitted (e.g., using “Short Message Service or another discrete message-oriented service”) to an end-user device, where it is decompressed and played back. *Id.*, 3:9-19; *see also id.*, 7:9-16, 7:26-8:10, FIG. 1. *Dolan*’s system is also designed to handle the segmentation and reassembly of audio messages that exceed the size limits of a single message (e.g., “specified by the SMS standard according to the existing SMS conventions”), ensuring complete and coherent delivery to the recipient. *Id.*, 8:25-9:5, 9:16-29; *see also id.*, 3:26-4:9, 11:22-12:9, FIG. 5.

Although *Dolan* initially discusses the functions of capturing an audio message, compressing the audio message, inserting the audio message into one or more Short Messages, and transmitting the Short Message(s) to an end user device with reference to a “Message Center,” *Dolan* also states that “[t]he mobile user may also be the initiator of a short audio message utilizing this invention, either as a reply to a received message or independently.” *Id.*, 15:4-5; *see also id.* 6:27-7:1 (“[The invention] can be built into any message center *or mobile phone* that supports digital

voice encoding and discrete message-oriented service.”). Indeed, with reference to figure 3, *Dolan* discloses an embodiment in which an end user device (e.g., a digital mobile telephone handset) performs the functionality of receiving and compressing audio information, inserting the compressed audio information into one or more Short Messages (e.g., SMS message(s)), and transmitting the Short Message to another end user device. *Id.*, 15:4-16:21, FIG. 3.

A POSITA would have readily recognized that figure 3 includes a drafting error in that the direction of the flowlines with respect to the End User Device 120 should be in the opposite direction of what is shown. *Lanning* ¶¶56-60. Below figure 3 is annotated to show the correct direction of the flow lines consistent with the description in the specification.

FIG. 3



Dolan, FIG. 3 (annotated).

Lanning ¶58.

Dolan explicitly and unambiguously explains that figure 3 is directed to an embodiment in which the user of an end user device initiates sending (e.g., speaks) an audio message that is transmitted to another end user device. *Dolan*, 15:4-7 (“The mobile user may also be the *initiator* of a short audio message utilizing this

invention, either as a reply to a received message or independently.”). Furthermore, consistent with the direction of flowlines in annotated figure 3 above, Dolan expressly describes that the audio information flows from Input Audio Information 302, to Audio Compression Function 304 to Short Message Creation Function 306, to Short Message Delivery Function - Transmit 315:

1. From Input Audio Information 302 to Audio Compression Function 304: “[I]llustrated in Fig. 3, the audio information is delivered 302 to the End User Audio Compression Function 304 of the End User Device 120, where it is encoded and compressed digitally.” *Id.*, 15:1-13.
2. From Audio Compression Function 304 to Short Message Creation Function 306: “The compressed audio information is then formatted into one or more Short Messages by the End User Short Message Creation Function 306.” *Id.*, 15:17-18.
3. From Short Message Creation Function 306 to Short Message Delivery Function - Transmit 315: “Once one or more Short Messages are created to contain the compressed audio information, the End User Short Message Delivery Function - Transmit 315 initiates transmission of the Short Message(s) to the Message Center

106 where they are received by the Message Center Short Message Delivery Function - Receive 325.” *Id.*, 15:25-16-3.

Given this written disclosure, a POSITA would have understood that the information in the End User Device 120 shown in figure 3 necessarily flows from Input Audio Information 302, to Audio Compression Function 304, to Short Message Creation Function 306, to Short Message Delivery Function (Transmit) 315. *Lanning* ¶¶58-60.

B. *Freedman*

Freedman is titled “Phonetic Speech-to-Text-to-Speech System and Method.” *Freedman*, (54). *Freedman* discloses a phonetic speech-to-text-to-speech system designed to optimize speech transmission with a small bandwidth from a source to a destination. *Id.*, Abstract, ¶[0008]; *see also id.* ¶¶[0035], [0048], [0063]. Specifically, the system processes speech by breaking it down into phonemes, then “encoding the phonemes into series of symbols ... other than a known symbolic representation of the speech in a known language,” thereby facilitating efficient transmission over telecommunication networks. *Id.* ¶[0011]; *see also id.* ¶¶[0020], [0035], [0038] (“encoding preferably results in a symbolic representation of the speech other than in a known human intelligible language”), [0048], [0050], [0053], FIG. 5.

C. *Halonen*

Halonen is titled “Methods and Apparatus for Updating the Software of a Mobile Terminal Using the Air Interface.” *Halonen*, (54). *Halonen* discloses hardware components of a typical cellular phone. For example, *Halonen* discloses a “controller 18 ... comprised of a digital signal processor (DSP) 18a and a microprocessor control unit (MCU) 18b,” to demodulate and decode received transmissions, including encoded voice, and perform high-speed signal processing. *Halonen*, 3:36-55; *see also id.*, 5:4-12, FIGs. 1, 3. *Halonen* discloses that “[t]he MCU 18b ... generally control[s] the operation of the terminal 10 to place and receive calls, to operate the keypad 22 and the display 20, to monitor the charge state of the battery 26, and other required functions.” *Id.*, 3:44-49. *Halonen* also discloses updating a mobile terminal’s operating program by receiving new or revised code blocks via Short Message Service (SMS), which are then acknowledged, processed, and stored for execution by the controller. *Id.*, 4:47-5:12.

Halonen discloses the cellular phone having a microphone, transceiver, and memory to store code for the controller. *Id.*, 2:53-3:14; *see also id.*, Abstract, 1:59-2:23. For example, *Halonen*’s transceiver is for bidirectional RF communications with a network. *Id.*, 1:59-2:23; *see also id.*, Abstract, 6:55-7:4, FIG. 1. *Halonen* also discloses memory units 24 for storing operating programs for the controller 18. *Id.*, 3:61-4:46; *see also id.*, Abstract, 1:59-2:23, FIGs. 1, 3.

VI. LEVEL OF ORDINARY SKILL IN THE ART

A person of ordinary skill in the art (“POSITA”) at the time of the ’078 patent’s purported priority date would have had at least a Bachelor’s of Science Degree (or equivalent) in electrical engineering, computer science, or computer engineering, or a related technical field and two years of experience working with mobile or wireless communications networks such as cellular networks, or a related technical field, and familiarity with short message service protocols. *Lanning* ¶¶22-24. A greater amount of education could compensate for fewer years of work experience, and vice versa. *Id.* ¶23.

VII. CLAIM CONSTRUCTION

Petitioners are unaware of any “prior claim construction determination” related to the ’078 patent. *See* 37 C.F.R. §42.100(b). Given the close correlation and substantial identity between the prior art references and the Challenged Claims, Petitioners believe that no express constructions of the claims are necessary to assess whether the prior art reads on the Challenged Claims. Thus, the claims should be

given their plain and ordinary meaning.⁴ *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

VIII. DETAILED EXPLANATION OF GROUNDS

The sections below, as supported by the Declaration of Mark Lanning, demonstrate how the Challenged Claims are unpatentable. *See* 37 C.F.R. 42.104(b)(4)-(5).

A. Ground 1A: *Dolan* Renders Obvious Claims 1-3, 8-11

1. Claim 1

a. 1[pre]: “A method of sending a voice message via a mobile communication device, said method comprising:”

To the extent the preamble is limiting, *Dolan* discloses or suggests this feature. *Lanning* ¶¶81-89. For example, *Dolan* discloses that the “present invention relates to delivery of audio messages to *or from* remote receiving units such as mobile telephones and, in particular, to a method for using Short Message Service or other discrete message-oriented services to deliver audio messages.” *Dolan*, 1:4-6. *Dolan* discloses an end user device (or remote receiving unit) for receiving *and sending*

⁴ Petitioners reserve all rights to raise claim construction arguments and other arguments in any parallel or future litigation concerning the '078 patent. For example, comparing the claims to the accused products in the litigation may raise controversies that require construction of certain claim terms.

audio messages via SMS. *Id.*, 2:26-27, 5:21-23, 7:28-8:3, 12:18-24, 15:4-7. In a preferred embodiment, “the end user device is conceived as a digital mobile telephone handset.” *Id.*, 4:12-13; *see also id.*, 10:22-23.

A POSITA would have understood that the audio messages discussed in *Dolan* encompass *voice* messages. *Lanning* ¶¶86-88. For example, *Dolan*’s examples of audio messages include phrases such as “Call home, emergency!” (*Dolan*, 6:16-17), which a POSITA would have understood as a spoken phrase by a person and include a human voice. *Lanning* ¶86; *see also Dolan*, 10:27-29 (“[I]n a preferred embodiment of the system the audio information 102, *such as a spoken phrase*, is delivered to the Message Center Audio Compression Function 110 within a Message Center 106, where it is encoded.”). Additionally, *Dolan* discloses encoding audio messages using “technology used in *voice* coding schemes on wireless networks” (*Dolan*, 7:9-12), which a POSITA would also have understood to mean that *Dolan*’s audio messages encompass voice messages. *Lanning* ¶88.

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest sending an audio message (“voice message”) via an end user device such as a digital mobile telephone handset (“via a mobile communication device”). *Id.* ¶89.

b. 1[a]: “receiving an utterance from a user of the mobile communication device;”

Dolan discloses or suggests this feature. *Lanning* ¶¶90-94.

For example, with reference to figure 3, *Dolan* discloses an embodiment in which the user of an end user device initiates sending a short audio message.⁵ *Dolan*, 15:4-7 (“The mobile user may also be the initiator of a short audio message utilizing this invention.”). As noted in Section VIII.A.1.a, *Dolan* discloses that the end user device may be a digital mobile telephone handset. *Dolan* discloses the digital mobile telephone handset receives the audio message. *Id.*, 15:5-13 (“As illustrated in Fig. 3, the flow of the audio information is from the End User Device 120 to the Message Center 106 for subsequent delivery to a second end user. ... In a preferred embodiment of the invention having this capability, illustrated in Fig. 3, the audio information is delivered 302 to the End User Audio Compression Function 304 of the End User Device 120, where it is encoded and compressed digitally.”). *Dolan* also discloses that the audio message can be a user speaking the words, for example, “Call home, emergency!” *Id.*, 6:16-17. A POSITA would have understood the phrase “Call home, emergency!” to constitute an utterance. *Lanning* ¶¶93 (citing *New Oxford American Dictionary*).

⁵ As discussed in §V.A, while *Dolan*’s figure 3 includes a drafting error, this would not have impacted a POSITA’s understanding of *Dolan*’s disclosure. *See also Lanning* ¶¶58-60.

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest a digital mobile telephone handset receiving an audio message (“receiving an utterance”) spoken by a user of the device (“from a user of the mobile communication device”). *Id.* ¶94.

c. 1[b]: “generating a non-text representation of the received utterance;”

Dolan discloses or suggests this feature. *Lanning* ¶¶95-102.

For example, *Dolan* discloses that “the audio information is delivered 302 to the End User Audio Compression Function 304 of the End User Device 120, *where it is encoded and compressed* digitally.” *Dolan*, 15:12-13; *see also id.*, 7:17-19 (“As a general proposition, in each of these compression techniques a voice signal is prepared for digital transmission by band-limiting and sampling at a convenient pre-specified frequency (such as 8 kHz).”).

Dolan further discloses that the “End User Audio Compression Function 304 may be successfully implemented utilizing any of the methods or technologies discussed as being suitable for the implementation of the Message Center Audio Compression Function 110.” *Id.*, 15:14-16. *Dolan* discloses that the Message Center Audio Compression Function 110 may be implemented “by any of the devices and methods known in the art that have the capability of encoding and compressing audio signals to produce a digital signal as an output.” *Id.*, 11:6-8. Thus, as *Dolan* explains,

normal speech is converted to a “compressed digital” form utilizing various vocoders already utilized by mobile phones. *Id.*, 11:8-10; *see also id.*, 11:11-14 (providing a list of known vocoders already used by mobile phones in the industry); *Lanning* ¶¶96-99.

As noted in the preceding paragraph, *Dolan* discloses compressing the audio information using voice coding schemes/technology such as known vocoders already used by mobile phones in the industry. *Lanning* ¶100. A POSITA would have also understood that *Dolan*’s compressed audio information is a non-text representation of the voice/speech because it is a compressed version of an audio signal that is not human readable text. *Id.* *Dolan*’s compressed audio information is similar to the ’078 patent’s disclosure, which recognizes that audio information compressed using a vocoder is a non-text representation of the audio. ’078*Pat*, 6:58-61 (“[I]nstead of using a phoneme recognizer, a vocoder could be used to generate the compressed representation and then that compressed representation would be inserted into the body of the SMS message.”); *Lanning* ¶101.

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest encoding and compressing (“generating a non-text representation”) an audio signal such as “Call home, emergency!” received by the digital mobile telephone handset (“of the received utterance”). *Lanning* ¶102.

d. 1[c]: “inserting at least some of the non-text representation into a body of a text message; and”

Dolan discloses or suggests this feature. *Lanning* ¶¶103-113.

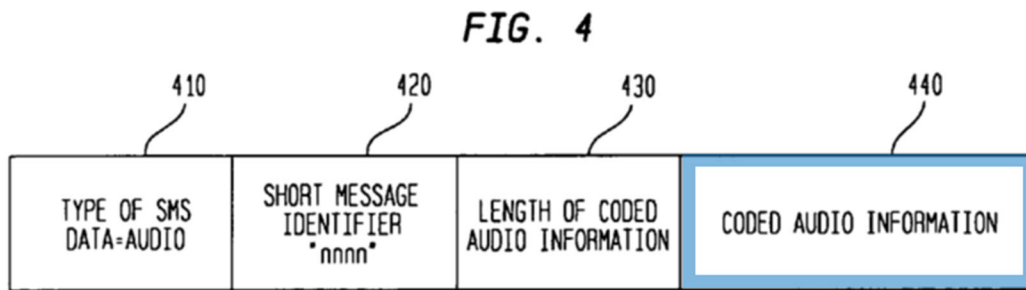
For example, *Dolan* discloses that the compressed audio information is “formatted into one or more Short Messages by the End User Short Message Creation Function 306.” *Dolan*, 15:17-18; *see also id.*, 3:14-15 (“The compressed audio information is transmitted by means of Short Message Service or another discrete message-oriented service to the end user.”), 7:26-27 (explaining same), 8:2-3 (“The transmission scheme used by the preferred embodiment of this invention is Short Message Service.”).

As *Dolan* explains, the standard implementation of Short Message Service (i.e., before implementing the enhancements described in *Dolan*) is used to send and receive text messages on digital mobile phones. *See, e.g., id.*, 1:18-19 (“SMS is currently utilized only to deliver messages to mobile stations as short *text* messages.”) (emphasis in original), 2:20-21 (“Short Message Service capability is two-way, i.e. a digital mobile phone user can both receive and send short *text messages* utilizing this technology.”), 3:1-3 (“In particular, an object of the present invention is to utilize Short Message Service or other existing *text message-oriented services* to deliver short audio messages.”); *Lanning* ¶105. *Dolan*’s disclosure is

consistent with the '078 patent, which identifies SMS messages as a form of text messages. '078*Pat*, 2:31-32 (“the text message is an SMS message”); *Lanning* ¶106.

Dolan discloses that “[t]he End User Short Message Creation Function 306 may be successfully implemented utilizing any of the methods or technologies discussed as being suitable for the implementation of the Message Center Short Message Creation Function 112.” *Dolan*, 15:18-21. *Dolan* discloses that the Message Center Short Message Creation Function formats the compressed audio information and inserts it into one or more Short Messages. *Id.*, 4:20-21; *see also id.*, 11:15-21 (“The compressed audio information is then formatted into one or more Short Messages by the Message Center Short Message Creation Function 112. The Message Center Short Message Creation Function 112 is implemented by any of the devices and methodologies known [sic] in the art for implementing a Short Message or other discrete message-oriented service, such as SMS, where a header and length field wrap the actual message during transmission. Examples of these are found in the TDMA, CDMA and GSM standards.”); *Lanning* ¶108.

With reference to figure 4, *Dolan* explains that “the major fields in a Short Message Service message used to carry coded audio information are a Type of Data field 410 ..., a Short Message Identifier field (‘nnnn’) 420 ..., a Length field 430 ..., and the coded audio information 440.” *Dolan*, 8:14-20; *Lanning* ¶¶109-110.



Dolan, FIG. 4 (annotated).

In the embodiment of figure 4, *Dolan* “assumes that all of the coded audio information 440, plus the Type of Data 410, Identifier 420, and Length 430 fields, will fit into a single SMS message sent across one or more intervening networks between a Message Center and the end user’s equipment (e.g., a mobile phone, PC, etc.).” *Id.*, 8:20-24.

A POSITA would have understood coded audio information 440 to comprise a body of the SMS message as it contains the encoded, compressed audio information that is being transmitted by the SMS message. *Lanning* ¶111. At a minimum, a POSITA would have understood the encoded, compressed audio information to have been inserted into the body of the SMS message because fields 410-440 together comprise the SMS message where the audio message is part 440. *Id.* ¶112.

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest inserting the compressed audio information (“inserting at least some of the non-text

representation”) into coded audio information field 440 of an SMS message (“into a body of a text message”). *Id.* ¶113.

- e. **1[d]: “sending the text message including the at least some of the non-text representation over a wireless messaging channel from the mobile communication device to a recipient’s device.”**

Dolan discloses or suggests this feature. *Lanning* ¶¶114-135.

Dolan explains that “[t]he mobile user may also be the initiator of a short audio message utilizing this invention.” *Dolan*, 15:4-5. In such circumstances, as *Dolan* explains with reference to figure 3, “the flow of the audio information is from the End User Device 120 to the Message Center 106 for subsequent delivery to a second end user.” *Id.*, 15:5-7; *see also id.*, 5:21-22 (“The mobile user may also utilize this invention to be the initiator of a short audio message to a second end user device.”); *Lanning* ¶115.

Dolan discloses that the “End User Short Message Delivery Function – Transmit 315 initiates transmission of the Short Message(s) [containing the compressed audio information] to the Message Center 106 where they are received by the Message Center Short Message Delivery Function – Receive 325.” *Dolan*, 15:28-16:3. *Dolan* further discloses that “[b]oth the End User Transmit 315 and Receive 325 Functions may be successfully implemented utilizing any of the technologies and methods discussed for the Message Center Transmit 114 and

Receive 121 Functions.” *Id.*, 16:3-6; *see also id.*, 16:13-15 (disclosing that once the Short Message(s) sent by the end user device are received by the Message Center 106, they “may be sent to another end user using the same techniques discussed in conjunction with the previous embodiments”).

Dolan discloses that “[t]he transmission scheme used by the preferred embodiment of this invention is Short Message Service . . .” *Id.*, 8:2-3. A POSITA would have understood that communication of SMS messages (e.g., from an end user device and to the *recipient*’s end user device that receives the audio message) occur over a wireless messaging channel. *Lanning* ¶118. For example, *Dolan* discloses that Short Message Service is “currently defined in various standards such as GSM (Global System for Mobile Communications).” *Dolan*, 1:21-22; *see also id.*, 11:16-21 (“The Message Center Short Message Creation Function 112 is implemented by any of the devices and methodologies know [sic] in the art for implementing a Short Message or other discrete message-oriented service, such as SMS, where a header and length field wrap the actual message during transmission. Examples of these are found in the TDMA, CDMA and GSM standards.”). A POSITA would have known that GSM, TDMA and CDMA were different standards for wireless communication implemented by mobile telephone devices that were

commonly known and referred to as “cellular phones.” *Lanning* ¶¶119-123 (citing *Tiedemann, Wilson, and Virtanen*).⁶

Further, *Dolan* discloses that the Message Center communicates with the end user device using one of a variety of known methods, including wireless. *Dolan*, 11:1-5; *see also id.*, 8:2-7 (“The transmission scheme used by the preferred embodiment of this invention is Short Message Service or any other discrete message-oriented service wherein Short Messages are captured on behalf of an end user, stored in a messaging center until the end user device is available to receive delivery, and then delivered digitally to the end user, such as the user of a digital *wireless telephone device*.”); *Lanning* ¶124.

Moreover, *Dolan*’s disclosure in this regard is the same or similar to the ’078 patent. *Id.* ¶125. More particularly, the ’078 patent explains in the Background of the Invention that “[m]ost legacy *wireless network systems* such as GSM, TDMA, and CDMA have a text/data channel capable of sending and receiving SMS, so the infrastructure for this service already exists even in emerging markets in developing

⁶ *Tiedemann, Wilson, and Virtanen* are cited in this Petition merely to demonstrate a POSITA’s knowledge and/or as evidence that a POSITA would have been motivated to make the combinations in the manner discussed in this Petition. These references are not part of the unpatentability grounds.

countries.” ’078*Pat*, 1:50-54. Additionally, the ’078 patent identifies SMS as an example of a wireless messaging channel. *Id.*, 2:30-31 (“The wireless messaging channel is an SMS channel”), 4:62-64 (“SMS application 180 then **wirelessly transmits** the SMS message over the SMS channel to the recipient's cell phone.”); *Lanning* ¶125.

Despite the above evidence, Patent Owner may argue that *Dolan* does not disclose this feature because *Dolan*’s figure 3 does not explicitly show the Message Center sending the Short Message to another End User Device. Contrary to this argument, a POSITA would have understood *Dolan* as a whole to disclose or suggest that an end user device can send an audio message to another end user device using one or more Short Messages (e.g., SMS messages). *Lanning* ¶127. For example, *Dolan* states that “[t]he mobile user may also utilize this invention to be the initiator of a short audio message **to a second end user device**.” *Dolan*, 5:21-22. In the context of figure 3 specifically, *Dolan* states that “the flow of the audio information is from the End User Device 120 to the Message Center 106 **for subsequent delivery to a second end user**.” *Id.*, 15:5-7. Although figure 3 does not explicitly show the second end user device, that would not have altered a POSITA’s understanding of *Dolan* as whole, especially in view of its written description. *Lanning* ¶128.

Additionally, Patent Owner may argue that *Dolan* requires that the compressed audio information in the Short Message is decompressed before it is sent

by the Message Center to another End User Device. Contrary to this argument, a POSITA would have understood *Dolan*'s disclosure to encompass an embodiment in which the Message Center receives the SMS message from the first end user device but does not decompress the audio information before forwarding it to the second end user device. *Id.* ¶129. *Dolan* discloses that, in the figure 3 embodiment, the audio information is delivered to the Message Center “for subsequent delivery to a second user” and that this “subsequent delivery may be accomplished [1] by reconstitution of the compressed audio information [i.e., decompression] and optional storage in a voice mailbox, or [2] by storage of the compressed audio information for delivery by means of Short Messages.” *Dolan*, 15:7-10. A POSITA would have understood that the second option involves delivery of the “compressed audio information” by a text message. *Lanning* ¶130. Thus, a POSITA would have understood *Dolan* to encompass an embodiment in which, when a first end user device sends an audio message using SMS to a second end user device, *Dolan*'s Message Center does not decompress the SMS message, but instead forwards it to the second end user device that performs the decompression. *Id.* ¶131.

Even if the Board were to conclude that *Dolan* does not expressly or inherently encompass the Message Center receiving an SMS message from a first end user device and forwarding it to another end user device without first decompressing the audio information contained in the SMS message (which for the

reasons already discussed, it does), that does not preclude finding that *Dolan* nevertheless teaches or suggests this limitation. *Id.* ¶132. First, nothing in the claim precludes decompression/recompression of the audio information before the SMS message is received by the ultimate end user device. *Id.* This claim feature is only directed to what is sent by the first end user device (“mobile communication device”), not what is actually received by the recipient’s device. *Id.*

Second, even if *Dolan*’s written description suggested the Message Center decompresses the audio information contained in every Short Message (and it does not), it would have been obvious to a POSITA to modify the functionality of *Dolan*’s Message Center such that audio information contained in Short Messages that are received but are intended for delivery to another end user device are not decompressed. *Id.* ¶133. A POSITA would have readily appreciated the advantages of such a modification, including that (i) as the Message Center has no need to replay the audio information, there is no reason for the audio information to be decompressed, and (ii) not decompressing the audio information would avoid unnecessarily expending processing resources to decompress the audio information. *Id.* ¶134. *Cf. DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1368 (Fed. Cir. 2006) (“[W]e have repeatedly held that an implicit motivation to combine exists not only when a suggestion may be gleaned from the prior art as a whole, but when the ‘improvement’ is technology-independent and the

combination of references results in a product or process that is more desirable, for example because it is stronger, cheaper, cleaner, faster, lighter, smaller, more durable, or more efficient.”).

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest sending compressed audio information that has been inserted into an SMS message (“sending the text message including the at least some of the non-text representation”) using an SMS protocol incorporated into at least one of the GSM, TDMA or CDMA wireless communication standards (“over a wireless messaging channel”) from one digital mobile telephone handset (“from the mobile communication device”) to a second digital mobile telephone handset (“to a recipient’s device”). *Lanning* ¶135.

2. Claim 2: “The method of claim 1, wherein the mobile communication device is a cellular phone.”

Dolan discloses or suggests this claim. *Lanning* ¶¶136-142. For example, *Dolan* discloses that “in the preferred embodiment the end user device is conceived as a digital mobile telephone handset” (*Dolan*, 4:12-13, 10:22-23), and in various places refers to the end user device as a mobile or wireless telephone (*id.*, 1:5, 1:27-2:1, 3:5-6, 6:14, 6:20). *Dolan* further discloses that its “invention is easily codified into mobile phone standards” (*id.*, 7:3), that the Short Message Service protocol that is used to send audio messages to digital mobile telephone handsets is “currently

defined in various standards such as GSM (Global System for Mobile Communications) [see, e.g., TIA/EIA/IS-637, Short Message Services for Wide Band Spread Spectrum *Cellular Systems*, 1995; TIA/EIA/TSB-79, Short Message Services for Wide Band Spread Spectrum *Cellular Systems*, 1997 (an update to IS-637); TS GSM 03.40, Digital *cellular telecommunications system*, Technical realization of the Short Message Service (SMS); Point-to-Point (PP)]” (*id.*, 1:21-26), and that examples of implementing SMS messages “are found in the TDMA, CDMA and GSM standards” (*id.*, 11:20-21). A POSITA would have known that digital mobile telephone handsets or mobile telephones that implement the TDMA, CDMA and/or GSM standards were commonly known and referred to as cellular telephones. *Lanning* ¶¶139-140 (citing *Tiedemann, Wilson, and Virtanen*).⁷ *Dolan*’s disclosure is similar to the ’078 patent, which identifies mobile phones that implement the GSM standard as cellular phones. ’078*Pat*, 7:38-47 (describing the “cellular phone” can be a “smartphone 300” that “supports GSM voice calls”). *Lanning* ¶141.

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest that the digital mobile telephone handset (“mobile communication device”) can implement any one of known standards such as TDMA, CDMA and/or GSM (“is a cellular phone”). *Lanning* ¶142.

⁷ See *supra* note 6.

3. **Claim 3: “The method of claim 1, wherein inserting at least some of the non-text representation involves inserting all of the non-text representation into the body of the text message.”**

Dolan discloses or suggests this claim. *Lanning* ¶¶143-145. As explained above in §VIII.A.1.d, *Dolan* discloses an embodiment in which all of the compressed audio information 440, plus the Type of Data 410, Identifier 420, and Length fields, will fit into a *single SMS message*. *Lanning* ¶144.

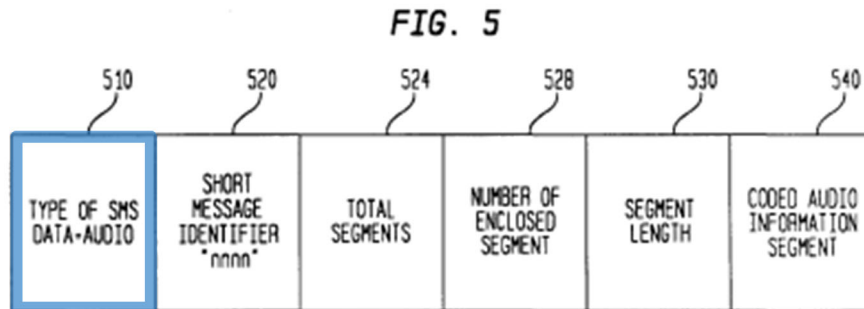
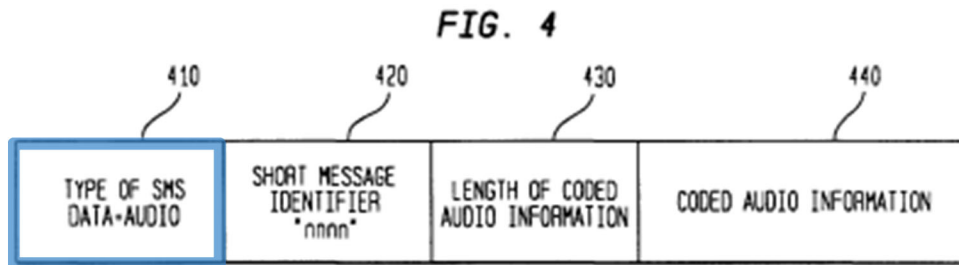
Accordingly, a POSITA would have understood *Dolan* to disclose or suggest an embodiment in which inserting the compressed audio information into the SMS message (“inserting at least some of the non-text representation”) involves inserting all of the compressed audio information (“involves inserting all of the non-text representation”) into the body of the SMS message (“into the body of the text message”). *Id.* ¶145.

4. **Claim 8: “The method of claim 1, wherein the wireless messaging channel is an SMS channel and the text message is an SMS message.”**

Dolan discloses or suggests this claim for the reasons discussed in §VIII.A.1.e (“the wireless messaging channel is an SMS channel”), and §VIII.A.1.d (“the text message is an SMS message”). *Lanning* ¶146.

5. Claim 9: “The method of claim 1, further comprising including an indicator with the text message identifying the text message as containing a non-text representation of the utterance.”

Dolan discloses or suggests this claim. *Lanning* ¶¶147-151. For example, *Dolan* discloses that “[t]he Short Message containing all or portions of the encoded audio information also contains a **type field** that indicates the contents of the Short Messages, as well as the type of audio decompression technique necessary to reconstitute the audio information.” *Dolan*, 8:11-13. This type field is shown as “Type of Data field 410” (*id.*, 8:15; *see also* FIG. 4 (Type of SMS Data = Audio 410)), or “Type of Data field 510” (*id.*, 10:7-8; *see also* FIG. 5 (Type of SMS Data = Audio 510)). *Dolan* discloses that “Type of Data field 410, indicat[es] that the associated message is an Audio message and include[es] information on the type of translator needed to decompress and decode the message field in order to retrieve the audio message.” *Id.*, 8:14-17; *see also id.*, 10:7-8 (“The Type of Data field 510 is the same as for a non-segmented message.”), FIGs. 4-5.



Dolan, FIGs. 4 & 5 (annotated).

Figures 4 and 5 both show the content of the Type of Data field being, for example, “Type of SMS Data = Audio.” Further, as explained in §VIII.A.1.c, the compressed audio information to which “Type of SMS Data = Audio” refers is a non-text representation of the audio message. *Lanning* ¶150.

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest including a Type of Data field with the SMS message (“including an indicator with the text message”) which indicates the associated message is a compressed audio of the user speaking the words, for example, “Call home, emergency!” (“identifying the text message as containing a non-text representation of the utterance”). *Id.* ¶151.

6. Claim 10: “The method of claim 1, wherein the non-text representation is a compressed version of the received utterance.”

Dolan discloses or suggests this claim for the reasons discussed in §VIII.A.1.c. *Lanning* ¶152.

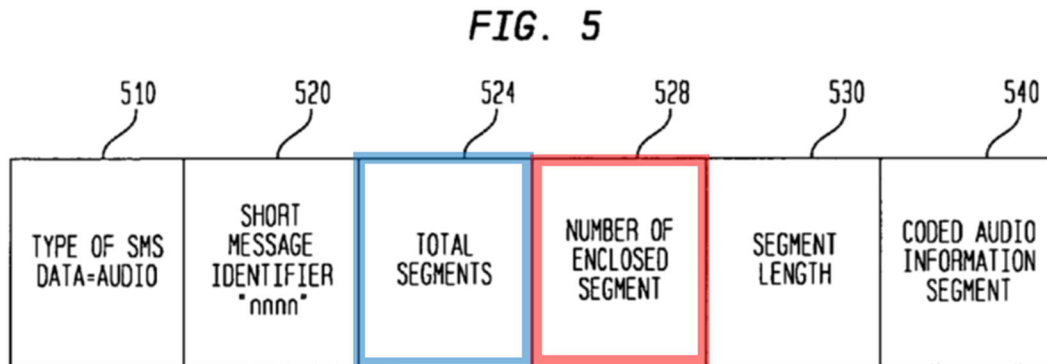
7. Claim 11

a. 11[a]: “The method of claim 1, further comprising dividing the non-text representation into sections and inserting each section into a body of a different corresponding text message of a plurality of text messages, wherein the first-mentioned text message is one of said plurality of text messages and”

Dolan discloses or suggests these features. *Lanning* ¶¶153-161.

With reference to figure 3, *Dolan* discloses that “[i]f the compressed audio information is too long to be contained in a single Short Message, it can be segmented into multiple Short Messages, utilizing any of the methods and technologies previously discussed.” *Dolan*, 15:21-24; *see also id.*, 9:26-28 (disclosing that “the segmentation and reassembly process [can be] carried out by the two endpoints which are transmitting and receiving the coded audio information”). More particularly, *Dolan* discloses that “[c]oded audio information that is too long for a single Short Message is broken into segments, each of which is placed into a separate Short Message having the fields: Type of Data; Short Message Identifier; Total Segments; Number of Enclosed Segment; Segment Length; and

Coded Audio Information Segment.” *Dolan*, 4:1-5; *see also id.*, 10:1-3 (“As shown in Fig. 5, coded audio information that is too long for a single Short Message is broken into segments, for example, into Segment 1 of 3, Segment 2 of 3, and Segment 3 of 3. Each of these segments is then placed into a separate Short Message”), *id.*, 11:27-12:2 (disclosing that when audio information is broken into multiple segments “each Short Message h[as] an indicator signaling that the segment contained within the Short Message is a particular segment number out of some total number of segments”). *Dolan* illustrates this type of Short Message in figure 5:



Dolan, FIG. 5 (annotated).

As *Dolan* explains, “[t]he Total Segments and Number of Enclosed Segment fields provide the means to identify and reassemble the segments of the coded audio information into the correct order at the end user device.” *Id.*, 4:5-7; *see also id.*, 10:11-14.

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest breaking compressed audio information that is too large for one Short Message into

multiple segments (“dividing the non-text representation into sections”) and placing each segment into a separate Short Message wherein each short Message is one of a total number of Short Messages (“and inserting each section into a body of a different corresponding text message of a plurality of text message”). *Lanning* ¶160. Additionally, where compressed audio information is broken into multiple segments, the Short Message discussed with respect to claim 1 would be one of the plurality of Short Messages into which the multiple audio segments are placed (“wherein the first-mentioned text message is one of said plurality of text messages”). *Id.* ¶161.

b. 11[b]: “further comprising sending the plurality of text messages over the wireless messaging channel from the mobile communication device to the recipient’s device.”

Dolan discloses or suggests this feature. *Lanning* ¶¶162-166.

As discussed in §VIII.A.1.e, *Dolan* discloses or suggests sending compressed audio information formatted into an SMS message (“sending the text message including the at least some of the non-text representation”) using an SMS protocol incorporated into at least one of the GSM, TDMA or CDMA wireless communication standards (“over the wireless messaging channel”) from one digital mobile telephone handset (“from the mobile communication device”) to a second digital mobile telephone handset (“to a recipient’s device”). A POSITA would have understood *Dolan*’s disclosure to equally apply to circumstances in which compressed audio information is formatted into multiple SMS messages. *Id.* ¶¶163-

165. More particularly, *Dolan* discloses with respect to figure 3 that “[o]nce one ***or more*** Short Messages are created to contain the compressed audio information, the End User Short Message Delivery Function – Transmit 315 initiates transmission of the Short Message(s) to the Message Center 106 where they are received by the Message Center Short Message Delivery Function – Receive 325.” *Dolan*, 15:28-16:3; *see also id.* 11:22-25 (“[I]f the compressed audio information is too long to be contained in a single Short Message, it can be segmented into multiple Short Messages utilizing any common methodology known in the art. For example, SMS has a segmentation and reassembly feature already built in.”).

Accordingly, a POSITA would have understood *Dolan* to disclose or suggest that when the compressed audio information is formatted into multiple SMS messages, each of the plurality of SMS messages is sent (“sending the plurality of text messages”) using the SMS protocol incorporated into at least one of the GSM, TDMA or CDMA wireless communication standards (“over the wireless messaging channel”) from one digital mobile telephone handset (“from the mobile communication device”) to a second digital mobile telephone handset (“to the recipient’s device”). *Lanning* ¶166.

B. Ground 1B: *Dolan* in view of *Freedman* Renders Obvious Claims 1, 4-7

Ground 1B is directed to a combination of *Dolan* and *Freedman*, in which as explained below, a phoneme-based technique for compressing audio as disclosed in *Freedman* is used to perform *Dolan*'s audio compression function.

1. Claim 1

- a. 1[pre] & 1[a]: 1[pre] (“A method of sending a voice message via a mobile communication device, said method comprising:”), and 1[a] (“receiving an utterance from a user of the mobile communication device;”)**

Dolan discloses or suggests 1[pre] and 1[a] for the same reasons discussed in §§VIII.A.1.a and VIII.A.1.b, respectively. *Lanning* ¶¶167-168.

- b. 1[b]: “generating a non-text representation of the received utterance;”**

Dolan in combination with *Freedman* discloses or suggests this feature. *Lanning* ¶¶169-180.

As discussed in §VIII.A.1.c, *Dolan* discloses or suggests compressing the audio message before inserting it into a Short Message, such as an SMS message; *Id.* ¶170. While *Dolan* specifically mentions examples of using vocoders already utilized by mobile phones to compress the audio message (*see, e.g., Dolan*, 11:6-14), *Dolan* states that “the captured [audio] information [can be] encoded by means of any audio compression technology known in the art” and that “[m]any techniques for compressing and encoding voice signals for digital transmission are well-known

in the art” (*id.*, 7:10-14); *Lanning* ¶170. *Dolan* “contemplate[s] that any of these [known] techniques may be used to perform the audio compression function of the invention.” *Dolan*, 7:15-16; *Lanning* ¶170.

Freedman is an example of a known technique in the art for compressing audio information, and specifically audio comprising human voice/speech, using a phoneme-based encoding technique. *Freedman*, Abstract; *Lanning* ¶171. *Freedman* provides “a system that allows for on-line transmission of speech with a small bandwidth from a source to a destination.” *Freedman* ¶[0008]; *Lanning* ¶172. *Freedman* accomplishes this goal by breaking spoken words into phonemes, thereby translating the provided speech “into a text that corresponds to the speech in a phonetic form.” *Freedman* ¶[0035]; *Lanning* ¶¶172-173. The phonetic text is then “transmitted via a telecommunication network such as the Internet or a public telephony switching system,” to another device which restores the speech according to the phonemes received and provides the restored speech to an output port (e.g., a speaker). *Freedman* ¶[0035].

As to the generation of the phonetic text, *Freedman* more particularly discloses “identify[ing] the phonemes when a part of a speech is received ... transcrib[ing] the phonemes into corresponding series of written characters such that a phonetic transcript of the original speech is generated ... [and] encoding the phonetic characters, the encoding resulting in a series of symbols as for example

alphanumeric equivalent or ASCII codes according to look-up tables. The encoding *preferably result[ing] in a symbolic representation of the speech other than in a known human intelligible language.*” *Id.* ¶[0038]; *see also id.* ¶[0057]. *Freedman* provides an example of using its technique to encode the sentence: “hello, the sun is shining” as the following phonemes: *hə’ləʊðɪksʌnɪz’f aɪnɪŋ*, which a POSITA would have understood to comprise a non-human intelligible string of symbols. *Freedman* ¶¶[0040]-[0041]; *Lanning* ¶174.

A POSITA would have understood that *Freedman*’s phoneme-based technique for encoding speech would have resulted in a compressed form of the speech requiring less bandwidth for transmission than if the speech were transmitted without first being encoded as described by *Freedman*. *Lanning* ¶175; *see also Freedman*, ¶¶[0007] (“It would be advantageous to provide with a system that requires reduced bandwidth to support voice communication.”), [0008] (“[I]t is an object of the present invention to provide with a system that allows for on-line transmission of speech with a small bandwidth from a source to a destination.”).

Freedman’s disclosure of using phonemes to generate a “series of symbols” or “a symbolic representation of the speech other than in a known human intelligible language” representing speech (*Freedman* ¶[0038]), is similar to the ’993 patent’s disclosure of using phonemes to generate a non-text representation of an utterance (*Lanning* ¶176). *See also* ’993Pat, 2:33-39 (“Generating the non-text representation

of the received utterance involves ... generat[ing] a string of symbols, wherein the string of symbols is the non-text representation. The symbols in the strig of symbols are selected from the group consisting of phonemes, diphones, and triphones (more specifically, the symbols are phonemes.”), 4:51-52 (“The output is a non-text representation of the spoken utterance, in this case, a phoneme string.”).

A POSITA would have found it obvious to use *Freedman*’s phoneme-based technique to perform *Dolan*’s audio compression function. *Lanning* ¶177. *Dolan* itself expressly provides the motivation to do so by stating that “[m]any techniques for compressing and encoding voice signal for digital transmission are well-known in the art” and that “any of these techniques may be used to perform the audio compression function of the invention.” *Dolan*, 7:13-16; *Lanning* ¶177. A POSITA would have found the combination obvious because it amounted to the simple substitution of one known element (*Freedman*’s phoneme-based technique to compress speech) for another (*Dolan*’s vocoder-based technique to compress speech) to obtain predictable results (to perform the speech compression function in *Dolan*’s system). *Lanning* ¶178.

Further, a POSITA would have had a reasonable expectation of success in combining *Dolan* and *Freedman* because both share a focus on enhancing communication efficiency through digital audio compression and transmission techniques. *Id.* ¶179. *Freedman*’s approach to minimizing bandwidth use with

phonetic speech-to-text-to-speech conversion complements *Dolan*'s method of delivering audio via discrete messaging services. *Id.* This combination suggests a reasonable and acceptable solution for optimizing audio communication while minimizing bandwidth usage, offering a solution that combines the benefits of short messaging and compression using phoneme-based encoding. *Id.*

Accordingly, a POSITA would have understood the *Dolan-Freedman* combination to disclose or suggest generating a phoneme-based representation (“generating a non-text representation”) of the user’s utterance (“of the received utterance”). *Id.* ¶180.

- c. 1[c] & 1[d]: 1[c] (“inserting at least some of the non-text representation into a body of a text message; and”), and 1[d] (“sending the text message including the at least some of the non-text representation over a wireless messaging channel from the mobile communication device to a recipient’s device.”)

Dolan in combination with *Freedman* discloses or suggests these features. *Lanning* ¶¶181-182.

Dolan discloses or suggests inserting the non-text representation of a user’s utterance (e.g., “Call home, emergency!”) into the body of a text message, and sending the text message including the non-text representation over a wireless messaging channel from the mobile communication device to a recipient’s device for the reasons discussed in §§VIII.A.1.d and VIII.A.1.e, respectively. In the *Dolan*-

Freedman combination, the non-text representation of the user's utterance that is inserted into the body of the text message is the phonetic representation of the utterance. Doing so would have been obvious to a POSITA for the reasons discussed in §VIII.B.1.b. *Id.* ¶182.

2. **Claim 4: “The method of claim 1, wherein generating the non-text representation of the received utterance involves performing recognition on a signal derived from the received utterance to generate a string of symbols, wherein the string of symbols is the non-text representation.”**

Dolan in combination with *Freedman* discloses or suggests this claim. *Lanning* ¶¶183-184. As described in §VIII.B.1.b, in the *Dolan-Freedman* combination, *Freedman* discloses identifying the phonemes when a part of a speech is received (“performing recognition on a signal derived from the received utterance”) and encoding the phonetic characters preferably resulting in a symbolic representation of the speech other than in a known human intelligible language (“to generate a string of symbols, wherein the string of symbols is the non-text representation”). *Id.* ¶184.

3. **Claim 5: “The method of claim 4, wherein the symbols in the string of symbols are selected from the group consisting of phonemes, diphones, triphones, syllables, and demisyllables.”**

Dolan in combination with *Freedman* discloses or suggests this claim. *Lanning* ¶¶185-188.

This claim is written in Markush form. *See Multilayer Stretch Cling Film Holdings, Inc. v. Berry Plastics Corp.*, 831 F.3d 1350, 1357 (Fed. Cir. 2016) (“Claim drafters often use the term ‘group of’ to signal a Markush group. A Markush group lists specified alternatives in a patent claim, typically in the form: a member selected from the group consisting of A, B, and C. It is generally understood that the members of the Markush group are alternatively usable for the purposes of the invention.”) (cleaned up). With respect to an element written in the Markush form, the entire element is disclosed by the prior art if one alternative in the Markush group is in the prior art. *Fresenius USA, Inc. v. Baxter Int’l, Inc.*, 582 F.3d 1288, 1298 (Fed. Cir. 2009).

Freedman discloses “identify[ing] the phonemes when a part of a speech is received ..., [and] provid[ing] the identified phoneme to a text generator ... [to] transcribe[] the phonemes into corresponding series of written characters such that a phonetic transcript of the original speech is generated ... [and] encoding the phonetic characters, the encoding resulting in a series of symbols as for example alphanumeric equivalent or ASCII codes according to look-up tables. The encoding preferably result[ing] in a symbolic representation of the speech other than in a known human intelligible language.” *Freedman*, ¶[0038].

Accordingly, a POSITA would have understood the *Dolan-Freedman* combination to disclose or suggest the symbolic representation of the user’s

utterance (“the symbols in the string of symbols”) being based on phonemes identified in the utterance (“are selected from the group consisting of phonemes ...”). *Lanning* ¶188.

4. **Claim 6: The method of claim 4, wherein the recognition is phoneme recognition and the symbols in the generated string of symbols are phonemes.**

Dolan in view of *Freedman* discloses or suggests this claim for the reasons discussed in §§VIII.B.2, and VIII.B.3, as well as §VIII.B.1.b. *Lanning* ¶189.

5. **Claim 7: “The method of claim 1, wherein generating the non-text representation of the received utterance involves performing phoneme recognition on a signal derived from the received utterance to generate a phoneme string, wherein the phoneme string is the non-text representation.”**

Dolan in view of *Freedman* discloses or suggests this claim for the reasons discussed in §§VIII.B.2, and VIII.B.3, as well as §VIII.B.1.b. *Lanning* ¶190.

C. Ground 2A: *Dolan* in view of *Halonen* Renders Obvious Claims 12, 15-17

1. Claim 12

- a. 12[pre]: **“A mobile communication device for sending a voice message, said mobile communication device comprising:”**

To the extent the preamble is limiting, *Dolan* discloses or suggests a digital mobile telephone handset (“a mobile communication device”) for sending an audio message (“for sending a voice message”) for the reasons discussed in §VIII.A.1.a. *Lanning* ¶¶191-192.

- b. 12[a] through 12[d]: 12[a] (“a processor system;”), 12[b] (“a microphone for receiving an utterance from a user of the mobile communication device;”), 12[c] (“a transceiver; and”), 12[d] (“memory storing code which when executed on the processor system causes the mobile communication device to:”)**

Dolan in combination with *Halonen* discloses or suggests these features.

Lanning ¶¶193-207.

For the reasons discussed in §VIII.A.2, a POSITA would have understood *Dolan*’s digital mobile telephone handset to be a cellular phone. *Id.* ¶194. A POSITA would have been motivated to look for additional information regarding how to implement *Dolan*’s digital mobile telephone handset (cellular phone) because *Dolan* itself does not focus on the implementation details of its digital mobile telephone handset. *Id.* ¶195. In so looking, a POSITA would have readily identified *Halonen*. *Id.* ¶¶194-195.

Halonen discloses the hardware components incorporated into a typical cellular phone. *Halonen*, 2:43-45 (“Reference is made to FIGS. 1 and 2 for illustrating a wireless user or mobile terminal 10, such as but not limited to a cellular radiotelephone.”). As with *Dolan*’s digital mobile telephone handset, *Halonen*’s mobile terminal also implements one or more standard cellular communication protocols. *Id.*, 3:18-25 (“It should be understood that the mobile terminal 10 ... may be capable of operating with any of a number of air interface standards, including

but not limited to ... GSM ... and IS-95 (CDMA).”). Similar to *Dolan*’s digital mobile telephone handset, *Halonen*’s mobile terminal can also process SMS messages. *Id.*, 4:55-56 (“By example, the code blocks can be sent using so-called Short Message Service (SMS) messages.”).

Halonen discloses its mobile terminal 10 having “controller 18 ... comprised of a digital signal processor (DSP) 18a and a microprocessor control unit (MCU) 18b” (*id.*, 3:38-40), a microphone 19 (2:61), and “a transceiver (14, 16) for conducting bidirectional RF communications with a communications network (32)” (*id.*, Abstract). *See also id.*, 1:63-64, 2:8-9, claim 1 (“A wireless user terminal having a transceiver for conducting bidirectional RF communications with a communications network.”), claims 3, 4, 14, 16, FIG. 1 (showing the transceiver comprised of “transmitter 14” and “receiver 16”).

To the extent Patent Owner argues that *Halonen* does not disclose a transceiver because figure 1 separately labels a transmitter (14) and receiver (16), that argument would be contrary to a POSITA’s understanding of *Halonen*. By repeatedly stating that bidirectional RF communication is conducted by a “transceiver,” a POSITA would have understood *Halonen*’s disclosure to encompass using a single component to implement *Halonen*’s transmitting and receiving functions even though *Halonen*’s figure 1 separately labels the transmitter and receiver functions of such a transceiver. *Lanning* ¶198. In any event, a POSITA

would have found it obvious to implement *Halonen*'s transmitting and receiving functions using a transceiver (instead of, for example, separate transmitter and receiver) because transceivers were well known in the art and doing so would have amounted to substituting one known element (a transceiver) for another (separate transmitter and receiver) to obtain predictable results (to effectuate transmitting and receiving). *Id.* (citing *Kimball*).⁸

A POSITA would also have understood that microphone 19 of *Halonen*'s mobile terminal 10 would have been configured to and been suitable for receiving words spoken by the user of the mobile terminal, such as, "Call home, emergency!", and converting the sounds spoken by the user to electrical signals for further processing by the mobile terminal 10. *Id.* ¶199.

Halonen also discloses its mobile terminal having "various memories, shown collectively as the memory 24," and that "[a]n operating program for controlling the operation of controller 18 is also stored in the memory 24 (typically in a ROM device)." *Halonen*, 3:1-9; *see also id.*, 3:50-52 ("The software routines executed by

⁸ *Kimball* is cited in this Petition merely to demonstrate a POSITA's knowledge and/or as evidence that a POSITA would have been motivated to make the combinations in the manner discussed in this Petition. *Kimball* is not part of the unpatentability grounds.

the MCU 18b to operate the mobile terminal 10 are referred to herein as its operating program.”), 3:64-66 (“The memories 24b and 24c are provided to store the operating program for the MCU 18b.”), FIG. 3. A POSITA would have understood that “code” in the context of the ’078 patent refers to “program instructions” and more particularly, here, to “[m]achine code consist[ing] of numerical instruction that the computer can recognize and execute and that were converted from source code.” *Lanning* ¶201 (citing *Computer Dictionary*). A POSITA would have further understood that the operating program stored in *Halonen*’s memory 24 comprises program instructions (i.e., code) that when executed by *Halonen*’s controller 18 (e.g., DSP 18a and/or MCU 18b) causes the controller to perform the programmed functionality. *Lanning* ¶201.

A POSITA would have appreciated that the mobile communications devices in *Dolan* and *Halonen* are similar to each other in as much as both are what are commonly referred to as “cellular phones” and both are compatible with and configured to implement one or more common cellular telephone protocols such as GSM and/or CDMA. *Id.* ¶202. Thus, to the extent that *Dolan* does not expressly disclose the components of its digital mobile telephone handset, a POSITA looking for additional implementation details would have readily identified *Halonen* and would have understood the applicability *Halonen*’s teaching of a controller, a microphone, transceiver, and a memory to *Dolan*’s digital mobile telephone handset.

Id. ¶203. That *Dolan* and *Halonen* disclose similar cellular telephone-type devices confirms that a POSITA would have understood how to predictably apply *Halonen*'s teaching regarding the components of a cellular telephone to *Dolan*'s digital mobile telephone handset. *Id.* ¶204.

Thus, a POSITA would have considered the combination to amount to the use of a known technique (*Halonen*'s teachings regarding the components of a cellular telephone, including a controller, a microphone, a transceiver, and a memory) to improve similar devices (*Dolan* digital mobile telephone handset) in the same way (to incorporate components into *Dolan*'s digital mobile telephone handset to implement such a device). *Id.* ¶205.

Accordingly, a POSITA would have understood the *Dolan-Halonen* combination to disclose or suggest a digital mobile telephone handset ("mobile communication device") having a controller comprising a DSP and a MCU ("processor system"), a microphone for receiving a an audio message such as "Call home, emergency!" spoken by a user ("a microphone for receiving an utterance from a user of the mobile communication device"), a transceiver ("transceiver"), and a memory for storing an operating program for controlling the operation of the mobile terminal ("memory storing code which when executed on the processor system causes the mobile device to"). *Id.* ¶206.

Moreover, because *Halonen* discloses that the operating program controls the

operation of the mobile terminal 10 (*Halonen*, 3:7-9, 3:50-52, 3:64-66), the *Dolan-Halonen* combination discloses or suggests that when the operating program stored in the memory is executed by the controller, the controller causes the digital mobile telephone handset to perform operations that meet claim elements 12[e] through 12[g] and the dependent claims as discussed below. *Lanning* ¶207.

c. 12[e]: “generate a non-text representation of the received utterance;”

Dolan in combination with *Halonen* discloses or suggests this feature. *Lanning* ¶¶208-209. More particularly, *Dolan* discloses its digital mobile telephone handset performing this functionality for the reasons discussed in §VIII.A.1.c. As discussed in §VIII.C.1.b, in the *Dolan-Halonen* combination, when the operating program stored in the memory is executed by the controller, the controller causes the digital mobile telephone handset to perform this operation. *Id.* ¶209.

d. 12[f]: “insert the non-text representation into a body of a text message; and”

Dolan in combination with *Halonen* discloses or suggests this feature. *Lanning* ¶¶210-212. More particularly, *Dolan* discloses its digital mobile telephone handset performing this functionality for the reasons discussed in §VIII.A.1.d. As noted in §VIII.A.1.d, with reference to figure 4, *Dolan* discloses an embodiment in which all of the compressed audio information is inserted into one SMS message. Additionally, as discussed in §VIII.C.1.b, in the *Dolan-Halonen* combination, when

the operating program stored in the memory is executed by the controller, the controller causes the digital mobile telephone handset to perform this operation. *Id.*

¶212.

- e. 12[g]: “send the text message including the non-text representation via the transceiver over a wireless messaging channel from the mobile communication device to a recipient’s device.”**

Dolan in combination with *Halonen* discloses or suggests this feature. *Lanning* ¶¶213-216. More particularly, *Dolan* discloses its digital mobile telephone handset “send[ing] the text message including the non-text representation ... over a wireless messaging channel from the mobile communication device to a recipients device” for the reasons discussed in §VIII.A.1.e. In the *Dolan-Halonen* combination, it would have been obvious to a POSITA to send the text message via the transceiver because *Halonen* teaches that the transceiver is used to bidirectionally communicate with other devices on a network. *Halonen*, Abstract (“a transceiver (14, 16) for conducting bidirectional RF communications with a communications network (32)”), 1:63-64, 2:8-9, claim 1 (“A wireless user terminal having a transceiver for conducting bidirectional RF communications with a communications network.”), claims 3, 4, 14, 16, Fig. 1 (showing “transmitter 14” and “receiver 16”); *Lanning* ¶215. Additionally, as discussed in §VIII.C.1.b, in the *Dolan-Halonen* combination, when the operating program stored in the memory is executed by the controller, the

controller causes the digital mobile telephone handset to perform this operation.

Lanning ¶216.

2. **Claim 15: “The mobile communication device of claim 12, wherein the wireless messaging channel is an SMS channel and the text message is an SMS message.”**

Dolan in combination with *Halonen* discloses or suggests this claim for the reasons discussed above in §VIII.A.4. *Lanning* ¶217.

3. **Claim 16: “The mobile communication device of claim 12, wherein the non-text representation is a compressed version of the received utterance.”**

Dolan in combination with *Halonen* discloses or suggests this claim for the reasons discussed in §VIII.A.6. *Lanning* ¶218.

4. **Claim 17**

- a. **Claim 17[a]: “The mobile communication device of claim 12, wherein the code when executed on the processor further causes the mobile communication device to: divide the non-text representation into sections; insert each section into a body of a different corresponding text message of a plurality of text messages, wherein the first-mentioned text message is one of said plurality of text messages; and”**

Dolan in combination with *Halonen* discloses or suggests these features. *Lanning* ¶¶219-221. More particularly, *Dolan* discloses its digital mobile telephone handset performing these functionalities for the reasons discussed in §VIII.A.7.a. As discussed in §VIII.C.1.b, in the *Dolan-Halonen* combination, when the operating program stored in the memory is executed by the controller, the controller causes the

digital mobile telephone handset to perform this operation. *Id.* ¶221.

b. 17[b]: “send the plurality of text messages over the wireless messaging channel from the mobile communication device to the recipient’s device.”

Dolan in combination with *Halonen* discloses or suggests these features. *Lanning* ¶¶222-224. More particularly, *Dolan* discloses its digital mobile telephone handset performing these functionalities for the reasons discussed in §VIII.A.7.b. As discussed in §VIII.C.1.b, in the *Dolan-Halonen* combination, when the operating program stored in the memory is executed by the controller, the controller causes the digital mobile telephone handset to perform this operation. *Id.* ¶224.

D. Ground 2B: *Dolan* in view of *Halonen* and *Freedman* Renders Obvious Claims 12-14

Ground 2B is directed to a combination of *Dolan*, *Halonen* and *Freedman*, in which a phoneme-based technique for compressing audio as described in *Freedman* is used to perform *Dolan*’s audio compression function, and *Halonen* provides additional details regarding the components incorporated into *Dolan*’s digital mobile telephone handset. A POSITA would have been motivated to combine *Dolan*, *Halonen* and *Freedman* for the same reasons discussed in §VIII.B.1.b (*Dolan* and *Freedman*), and §VIII.C.1.b (*Dolan* and *Halonen*).

1. Claim 12

- a. 12[pre] through 12[d]: 12[pre] (“A mobile communication device for sending a voice message, said mobile communication device comprising:”), 12[a] (“a processor system;”), 12[b] (“a microphone for receiving an utterance from a user of the mobile communication device;”), 12[c] (“a transceiver; and”), 12[d] (“memory storing code which when executed on the processor system causes the mobile communication device to:”)**

Dolan in combination with *Halonen* discloses or suggests these features for the reasons discussed in §§VIII.C.1.a and VIII.C.1.b. *Lanning* ¶¶225-226.

- b. 12[e]: “generate a non-text representation of the received utterance;”**

Dolan in combination with *Halonen* and *Freedman* discloses or suggests this feature. *Lanning* ¶¶227-230.

More particularly, *Dolan* in combination with *Freedman* discloses or suggests generating a phoneme-based representation (“generating a non-text representation”) of the user’s utterance (“of the received utterance”) for the reasons discussed in §VIII.B.1.b. As discussed in §VIII.C.1.b, *Dolan* in combination with *Halonen* discloses or suggests that, when the operating program stored in the memory is executed by the controller, the controller causes the digital mobile telephone handset to perform the operation. *Lanning* ¶229. *Freedman* is also compatible with *Halonen* because *Freedman* discloses that its phoneme-based speech processing is performed using a processor 20. *Freedman*, ¶[0035]. A POSITA would have understood,

therefore, that in the *Dolan-Halonen-Freedman* combination, *Freedman*'s teachings regarding how to encode speech using phonemes would be implemented through the operating program stored in the memory of, and executed by the controller of, the *Dolan-Halonen* combination. *Lanning* ¶230.

- c. 12[f] & 12[g]: 12[f] (“insert the non-text representation into a body of a text message; and”), and 12[g] (“send the text message including the non-text representation via the transceiver over a wireless messaging channel from the mobile communication device to a recipient’s device.”)

Dolan in combination with *Halonen* and *Freedman* discloses or suggests these features. *Lanning* ¶¶231-233.

More particularly, *Dolan* in combination with *Freedman* discloses or suggests inserting a phonetic representation of the user’s utterance (“insert the non-text representation”) into the body of a text message, and sending the text message including the non-text representation over a wireless messaging channel from the mobile communication device to a recipient’s device for the reasons discussed in §VIII.B.1.c. As discussed in §VIII.A.1.d, with reference to figure 4, *Dolan* discloses an embodiment in which all of the compressed audio message is inserted into one SMS message.

In the *Dolan-Halonen-Freedman* combination, it would have been obvious to a POSITA to send the text message via the transceiver for the reasons discuss in §VIII.C.1.e. *Id.* ¶233. Additionally, for the reasons discussed in §VIII.C.1.b, in the

Dolan-Halonen-Freedman combination, when the operating program stored in the memory is executed by the controller, the controller causes the digital mobile telephone handset to perform this operation. *Id.*

2. **Claim 13: “The mobile communication device of claim 12, wherein generating the non-text representation of the received utterance involves performing recognition on a signal derived from the received utterance to generate a string of symbols, the string of symbols being the non-text representation.”**

Dolan in combination with *Halonen* and *Freedman* discloses or suggests this claim. *Lanning* ¶¶234-235. More particularly, in the *Dolan-Halonen-Freedman* combination, *Freedman* discloses identifying the phonemes when a part of a speech is received (“performing recognition on a signal derived from the received utterance”) and encoding the phonetic characters preferably resulting in a symbolic representation of the speech other than in a known human intelligible language (“to generate a string of symbols, wherein the string of symbols is the non-text representation”) for the reasons discussed in §VIII.B.2, as well as §VIII.B.1.b. *Id.* ¶235.

3. Claim 14: “The mobile communication device of claim 13, wherein the symbols in the string of symbols are selected from the group consisting of phonemes, diphones, triphones, syllables, and demisyllables.”

Dolan in combination with *Halonen* and *Freedman* discloses or suggests this claim. *Lanning* ¶¶236-237. More particularly, *Freedman* discloses this claim for the reasons discussed in §VIII.B.3. *Id.* ¶237.

IX. SECONDARY CONSIDERATIONS

There is no evidence in the '078 patent's prosecution history or elsewhere supporting any secondary considerations arguments, or evidence of nexus of such alleged evidence to the Challenged Claims. *See generally* EX. 1004; *Lanning* ¶238. To the extent Patent Owner asserts the existence of any secondary considerations in its responses, Petitioners reserve the right to address any such evidence.

X. THE DISCRETIONARY FACTORS FAVOR INSTITUTING TRIAL

A. 35 U.S.C. § 314(a)

To the extent the Patent Owner asks the Board to exercise its discretion to deny institution despite the strong invalidity showing on the merits, the Board should decline to do so because the weight of the factors articulated in *Apple Inc. v. Fintiv*,

Inc., IPR2020-00019, Paper 11 at 6 (PTAB Mar. 20, 2020) (precedential) favors institution.⁹

As an initial matter, there is no litigation currently pending against Co-petitioner Google. The '078 patent is asserted against Co-petitioner Samsung but not Co-petitioner Google. 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).

1. Stay

Factor 1 is neutral. Co-petitioner Samsung has not requested a stay but intends to do so. The PTAB has explained that it will not speculate on how any such motion would be resolved, before one is filed. *Google LLC v. Parus Holdings, Inc.*, IPR2020-00847, Paper 9 at 12 (PTAB Oct. 21, 2020); *see also Hulu LLC v. SITO Mobile R&D IP, LLC*, IPR2021-00298, Paper 11 at 10-11 (PTAB May 19, 2021) (concluding that without evidence of a requested stay or consideration by the district

⁹ The *Fintiv* framework should not be followed because it is legally invalid as (1) exceeding the Director's authority, (2) arbitrary and capricious, and (3) adopted without notice-and-comment rulemaking.

court in the parallel litigation, this factor does not significantly impact the Board's exercising discretion to deny institution of the IPR).

2. Trial Date

The district court in the parallel litigation against Co-petitioner Samsung held a scheduling conference on March 25, 2024, and set jury selection for August 4, 2025, approximately 13 months away. Ex. 1017. Any comparison of a projected FWD date against the scheduled trial date is speculative. *See Dish Network L.L.C. v. Broadband iTV, Inc.*, IPR2020-01280, Paper 17 at 16 (PTAB Feb. 4, 2021) (“We cannot ignore the fact that the currently scheduled trial date is more than nine months away and much can change during this time”).

Setting that aside, this Petition is filed on July 24, 2024, so a FWD would be expected by January 2026. Although this is approximately five months after the currently scheduled (speculative) trial date, this factor is not determinative or considered in isolation. *Facebook, Inc. v. USC IP P'Ship*, IPR2021-00034, Paper 13 at 11 (PTAB April 13, 2021) (“[T]his factor is not considered in isolation, but holistically along with other factors”) (citation omitted). Moreover, the Board has instituted IPR and found, on similar facts, that this factor weighs only minimally in favor of denial. *See, e.g., Google LLC, et al. v. Multimodal Media LLC*, IPR2024-00056, Paper 9 at 8 (PTAB Apr. 12, 2024) (a period of about six months between trial and the expected FWD “weighs only marginally in favor” of denial); *NetNut*

Ltd. v. Bright Data Ltd., IPR2021-01492, Paper 12 at 9-16 (PTAB Mar. 21, 2022) (instituting IPR without stipulation and copending trial date six months before FWD); *Facebook*, IPR2021-00034, Paper 13 at 11 (a period of five months between trial and expected FWD “slightly favors denial”); *Coolit Systems, Inc. v. Asetek Danmark A/S*, IPR2021-01195, Paper 10 at 11 (PTAB Dec. 28, 2021) (a period of five months between trial and expected FWD “weighs slightly in favor” of denial); *Equipmentsshare.com Inc. v. Ahern Rentals, Inc.*, IPR2021-00834, Paper 19 at (PTAB Nov. 16, 2021) (a period of seven months between trial and expected FWD “weighs somewhat in favor” of denial).

3. Diligence/Investment

Factor 3 weighs strongly against discretionary denial. No substantive orders have been issued by the court in the underlying litigation, and investment in the parallel litigation against Co-petitioner Samsung will have remained low at the time of institution. *See, e.g., Hulu LLC v. SITO Mobile R&D IP, LLC*, IPR2021-00298, Paper 11 at 12-14 (PTAB May 19, 2021) (holding that this factor supports instituting IPR given the early stage of the district court proceedings, the lack of substantial discovery related to invalidity claims, and the petitioner’s diligent filing of the petition after receiving preliminary infringement contentions). Assuming that a Decision on Institution is issued by January 2025, much work in district court will remain. *Id.* Claim construction briefing does not begin until January 6, 2025, and the

Markman hearing is scheduled for February 21, 2025. Opening expert reports are due March 17, 2025, and dispositive motions are due April 28, 2025. *Id.*

4. Overlap

Factor 4 weighs against discretionary denial. Petitioners challenge claims 1-17 in this Petition, whereas Patent Owner has alleged infringement of only claims 1-3, 8-10, 12, 15-17. Ex. 1016. Accordingly, a material number of the challenged claims will not be addressed by the district court. *See, e.g., Precision Planting LLC v. Maschio Gaspardo S.p.A.*, IPR2024-00008, Paper 12 at 18 (PTAB Mar. 26, 2024) (holding that despite substantial overlap in issues between the IPR petition and parallel district court action, the inclusion of claims in the petition not contested in court argues against discretionary denial due to incomplete overlap). Additionally, Co-petitioner Google is not a party to the underlying litigation, so this IPR is the only forum in which Google can present its invalidity challenge.

5. Parties

The Board should give little weight to the fact that Co-petitioner Samsung and Patent Owner are also parties to the parallel litigation because Co-petitioner Google and the defendant Samsung entities are not the same party.

6. Other considerations.

Even if the *Fintiv* factors favor discretionary denial (which they do not), the merits are compelling here. The Office did not consider a wealth of prior art during prosecution that discloses and/or suggests the alleged invention.

Petitioners therefore respectfully submit that the *Fintiv* factors favor institution and that discretionary denial of this Petition would be neither appropriate nor equitable.

B. 35 U.S.C. §325(d)

The Board should likewise not exercise its discretion under §325(d) to deny institution of Petitioner's petition. There are no references presented in the unpatentability grounds that were previously considered by the Office.

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

A. Real Parties-in-Interest

Petitioners identify themselves as the real parties-in-interest.¹⁰

1. Related Matters

To the best of Petitioners' knowledge, the '078 patent has only been involved

¹⁰ Google LLC is a subsidiary of XXVI Holdings Inc., which is a subsidiary of Alphabet Inc. XXVI Holdings Inc. and Alphabet Inc. are not real parties-in-interest to this proceeding.

in the following district court litigation: *Cerence Operating Co. v. Samsung Electronics Co., Ltd. et al.*, 2:23-cv-00482-JRG-RSP (E.D. Tex.), filed October 13, 2023.

To the best of Petitioners' knowledge, the '078 patent has not been challenged in any other *inter partes* review or post-grant review prior to this proceeding.

Petitioners are concurrently filing IPR2024-00979 directed to U.S. 8,081,993, which is a divisional of the '078 patent.

B. Lead and Backup Counsel

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C. Service Information

Please address all correspondence to lead and back-up counsel at the addresses shown above. Petitioners consent to electronic service by email at the following addresses:

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D. Power of Attorney

A power of attorney is filed herewith according to 37 C.F.R. §42.10(b).

XII. FEES

Petitioners concurrently electronically submits the required fees for this

Petition. The Board is authorized to charge Arnold & Porter Kaye Scholer LLP's deposit account, No. 50-2387, for any fee deficiency.

Date: July 24, 2024

Respectfully submitted,

/Ali R. Sharifahmadian/
Ali R. Sharifahmadian (Reg. No. 48,202)
Counsel for Petitioners

CERTIFICATE OF COMPLIANCE

The undersigned hereby certifies that the foregoing Petition for *Inter Partes* Review contains 12,291 words, excluding those portions identified in 37 C.F.R. §42.24(a), as measured by the word-processing system used to prepare this paper.

/Ali R. Sharifahmadian/
Ali R. Sharifahmadian (Reg. No. 48,202)
Counsel for Petitioners

CERTIFICATE OF SERVICE

I certify that on July 24, 2024, I caused a true and correct copy of the foregoing Petition for *Inter Partes* Review of U.S. Patent No. 7,395,078 and supporting exhibits to be served via overnight delivery on the Patent Owner at the following correspondence address of record as listed on PAIR:

Bruce Sunstein
Sunstein LLP
100 High Street
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