IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF MASSACHUSETTS

NUANCE COMMUNICATIONS, INC.,

Plaintiff,

v.

Case No. 1:19-cv-11438-PBS

JURY TRIAL DEMANDED

OMILIA NATURAL LANGUAGE LEAVE TO FILE GRANTED SOLUTIONS, LTD.,

Defendant.

ON JUNE 8, 2020

FIRST AMENDED COMPLAINT FOR COPYRIGHT INFRINGEMENT, VIOLATION OF THE COMPUTER FRAUD AND ABUSE ACT, VIOLATION OF THE DIGITAL MILLENNIUM COPYRIGHT ACT, CONVERSION, TRESPASS TO CHATTELS, AND PATENT INFRINGEMENT

Plaintiff Nuance Communications, Inc. ("Nuance" or "Plaintiff") files this Complaint for violation of the Computer Fraud and Abuse Act, violation of the Digital Millennium Copyright Act, conversion, trespass to chattels, and patent infringement against Defendant Omilia Natural Language Solutions, Ltd. ("Omilia" or "Defendant"), and alleges as follows:

NATURE OF THE ACTION

1. Nuance is a global leader in customer engagement innovation solutions. Leading organizations worldwide rely on Nuance's intelligent offerings to meet and exceed rising consumer expectations—from an ever-growing array of devices and across all channels and touchpoints. Nuance's proprietary automatic speech recognition ("ASR") technology is the foundational technology of its contact center and customer service engagement solutions. It has been perfected by Nuance over twenty-five years of delivering intelligent customer self-service solutions. With over 250 cumulative years of speech R&D experience on its team, Nuance is an expert at developing the best quality experience for its customers and for their end-users.

- 2. This action includes claims against Omilia for copyright infringement, violation of the Computer Fraud and Abuse Act, Digital Millennium Copyright Act, conversion, and trespass to chattels, based on Omilia's wrongful download and use of information from Nuance without authorization. At one time, Omilia was a reseller of Nuance's proprietary ASR technology, including Nuance Recognizer 9 and 10. Nuance terminated that reseller agreement in early 2014. Shortly thereafter, Omilia launched an ASR product under its own brand. In this litigation and elsewhere, Omilia has recently provided information that has enabled Nuance to uncover evidence showing that before and/or during the period of Omilia's purported ASR development, it had violated the terms of Omilia's reseller agreement with Nuance by recording actual end-customer calls flowing through Nuance's product for use as training data for their own ASR product development, and also improperly downloaded hundreds of Nuance software packages including language models for 70 different languages after the termination of its right to do so.
- 3. Additionally, this is an action for patent infringement of United States Patent Nos. 7,505,905 ("the '905 Patent"), 8,532,993 ("the '993 Patent"), 8,027,839 ("the '839 Patent"), 8,521,534 ("the '534 Patent"), 8,379,804 ("the '804 Patent"), 8,909,532 ("the '532 Patent"), 7,149,688 ("the '688 Patent"), and 6,999,925 ("the '925 Patent") (collectively, the "Asserted Patents") under the United States Patent Laws, 35 U.S.C. § 1 *et seq.* Nuance is a leading designer and provider of innovative Automated Speech Recognition (ASR) and transcription technologies for businesses around the world. Nuance's Conversational Interactive Voice Response (IVR) systems and related technologies are used by many leading call centers, in multiple languages,

around the world. Nuance owns patents covering these ASR, IVR, and translation technologies, including the Asserted Patents.

- 4. Nuance brings this action because Omilia chose to infringe Nuance's valuable intellectual property instead of expending time and resources to create and develop its own technology. Omilia's infringing conduct is no accident; it first learned of Nuance's innovation in interactive voice response and speech recognition technologies long ago, when it licensed certain of Nuance's speech verification and recognition software products overseas for use in Omilia's systems outside the United States. That relationship ended years ago, yet Omilia continues to use Nuance technology within their own products, and Omilia has simply opted to infringe Nuance's patents, rather than attempt to compete legitimately in the market using its own research and development. More recently, with Omilia's expansion into North America, Omilia has begun infringing Nuance's United States patents.
- 5. Recent disclosures in the various ongoing litigations between these parties has enabled Nuance to uncover additional wrongdoing by Omilia. Prior to Nuance's termination of the reseller agreement with Omilia, while Omilia acted as a reseller for Nuance products, Omilia wrongfully recorded live customer audio from systems implementing Nuance ASR technology and used these recordings as training data in its effort to create its own ASR engine. Further, starting after Nuance provided notice of termination of the reseller agreement on October 31, 2013, and intensifying significantly after that termination became effective on January 31, 2014, Omilia's CEO, Dimitris Vassos (or someone logged in as him) wrongfully downloaded hundreds of Nuance program files, including dozens of language models and products that it had not purchased from Nuance. On information and belief, Omilia used both the recordings of live customer calls and the improperly-downloaded Nuance software to facilitate the development of

Omilia's deepASR engine in a time frame and to a quality that would not have otherwise been possible.

6. Nuance seeks to recover damages for Omilia's wrongful conduct and to stop Omilia's continuing use of improperly-gained proprietary information and its willful patent infringement.

PARTIES

- 7. Nuance is a corporation formed under the laws of Delaware and has a principal place of business at 1 Wayside Road, Burlington, Massachusetts. Nuance is a global leader in developing and providing innovative interactive voice response and speech recognition technologies for business and individuals. A wide variety of industries rely on Nuance's advanced solutions to power and enhance interactions with customers and improve user experiences, including financial services, healthcare, telecommunications, retail, travel, utilities, government, and insurance. Nuance owns patents covering these technologies, including the Asserted Patents.
- 8. Upon information and belief, Omilia is a foreign entity formed under the laws of the country of Cyprus with a principal place of business in the country of Cyprus at Gladstonos 55, Roussos Center Point, Office 3C-3D, 3040 Limassol.

JURISDICTION AND VENUE

9. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. § 1 *et seq*. Nuance further asserts accompanying claims for violations of the Computer Fraud and Abuse Act, 18 U.S.C. § 1030 ("CFAA"), and the Digital Millennium Copyright Act ("DMCA"), 17 U.S.C. § 1201, as well as conversion and trespass to chattels under common law.

- U.S.C. § 1331 because this action alleges violations of federal statutes, including the Copyright Act (17 U.S.C. § 101), the Computer Fraud and Abuse Act (18 U.S.C. § 1030), the DMCA (17 U.S.C. § 1203), and the patent laws of the United States (35 U.S.C. § 1 *et seq.*). This Court further has subject matter over the patent infringement claims under at least 28 U.S.C. § 1338(a). This Court has supplemental and diversity jurisdiction over the common-law conversion and trespass to chattels claims under 28 U.S.C. § 1367 and 38 U.S.C. § 1332.
- 11. This Court has personal jurisdiction over Omilia because, upon information and belief, Omilia operates or has operated a place of business in this State, located at 51 Melcher Street, 1st Floor, Boston, MA 02210. From January 2015 to October 2018 the month in which Nuance notified Omilia of its alleged patent infringement Omilia identified Boston as its "North America Office" on its website. Dkt. No. 23 at 12. On its website, Omilia claimed to be working with financial institutions in the United States to offer the allegedly infringing platform to customers. The website also listed the above Boston address as well as a local Boston phone number. During that same time period, the website listed Quinn Agen, who Omilia described as "employee number 6" on its team as its contact for its North American Office in Boston and described him as "spearhead[ing] Omilia's entry into the North American market." Dkt. No. 23 at 42. As of September 5, 2019, Omilia's founder and CEO, Dimitris Vassos, indicated on his LinkedIn profile that he currently worked for "Omilia Conversational Intelligence" in "Boston USA." Dkt. No. 23 at 39-40.
- 12. This Court also has personal jurisdiction over Omilia because, upon information and belief, Omilia has marketed and sold the infringing products described herein to customers in this State. For example, Omilia sponsored and attended the American Banker Conference in

Boston in 2017, including giving a presentation about Royal Bank of Canada's use of Omilia's interactive voice recognition platform. Dkt. No. 23 at 45-46.

- 13. This Court also has personal jurisdiction over Omilia because, upon information and belief, end-users of the infringing products described herein are residents of this State.
- 14. In the alternative, to the extent Omilia contests personal jurisdiction in this State, service or waiver of the summons in this action will establish that this Court has personal jurisdiction over Omilia under Fed. R. Civ. P. 4(k). Omilia states that it currently "work[s] with a number of financial institutions and telecom operators in the USA, who want to offer their customer base a truly user-friendly, effective, omni-channel self-service solution, while slashing operating costs." Upon information and belief, Omilia markets and sells the infringing products described herein to customers throughout the United States. Upon information and belief Omilia attends and has attended trade shows in the United States for the purpose of marketing and selling the infringing products, including in Washington, D.C., Santa Monica, CA, Orlando, FL, and Las Vegas NV. Upon information and belief, end-users of the infringing products described herein reside throughout the United States. Thus, to the extent that Omilia "is not subject to jurisdiction in any state's courts of general jurisdiction," "exercising jurisdiction [would] nevertheless [be] consistent with the United States Constitution and laws."
- 15. Venue is proper in this District under 28 U.S.C. §§ 1391(b)(1)-(3) because Omilia is subject to personal jurisdiction in the State of Massachusetts and thus resides in this District for the purposes of venue. In the alternative, to the extent Omilia does not reside in this District or elsewhere in the United States for venue purposes, Omilia is subject to suit in any judicial district, including this District, under 28 U.S.C. § 1391(c)(3). Further, because Nuance is a resident of this

¹ https://omilia.com/about-us/.

District and the owner of the Asserted Patents, a substantial part of the events or omissions giving rise to the claim – Omilia's infringement – occurred in this District. Venue is also proper in this District under 28 U.S.C. § 1400(b) because Omilia resides in this District for venue purposes, and because it has committed acts of infringement and has or has had a regular and established place of business in this District.

FACTS

Relationship Between Nuance and Omilia

- 16. At the core of Nuance's contact center automation solutions is Nuance Recognizer. Nuance Recognizer features the industry's highest recognition accuracy, producing natural conversations for the effortless, proactive and intelligent self-service experience that customers expect. Nuance Recognizer is built on years of industry-leading expertise, now enhanced with advanced technologies like deep neural networks and machine learning. Nuance has invested vast resources, including creativity, talent, time, effort, and money, to develop Nuance Recognizer and its related ASR technology.
- 17. On or about June 12, 2002, Nuance Communications, Inc. (a different corporate entity than, but predecessor to, plaintiff Nuance) and Omilia Ltd. entered into a Value Added Reseller Agreement ("VAR Agreement"), permitting Omilia to act as a reseller for Nuance Recognizer as well as other Nuance ASR technology.
- 18. Pursuant to Section 7.2 of the VAR Agreement, Nuance retained "exclusive ownership of all documents, deliverables, other materials, inventions, know-how and works of authorship invented, authored or otherwise generated by Nuance." Also pursuant to Section 8.1 of the VAR Agreement, Nuance is entitled to "full access and rights to all In-Service Data generated through the use of each Integrated System." Section 1.1.0 defines In-Service Data to

include the audio inputs from calls. On or about October 28, 2005, the VAR Agreement was assigned from Nuance Communications, Inc. to Nuance Communications International BVBA.

- 19. From 2005 to 2007, Nuance Communications International BVBA entered into various licenses in furtherance of their ongoing business relationship.
- 20. On or about January 11, 2011, Nuance Communications International BVBA and Omilia Ltd. entered into a Partner Agreement ("2011 Partner Agreement"). Section 13.1 states that the 2011 Partner Agreement "shall supersede any and all prior agreements, understandings, promises, and representations made by one Part to the other concerning the subject matter herein and the terms and conditions applicable thereto."
- 21. The 2011 Partner Agreement, Omilia was granted the right to act as a strategic partner of Nuance within Europe and the Commonwealth of Independent States, with primary focus on Greece, Turkey, Cyprus, Russia, Ukraine, and Belarus. Pursuant to Section 5.2 of the 2011 Partner Agreement, "Nuance retains all title, interests, and rights in and to the Software and/or Deliverables in all (language) versions delivered hereunder, and to any derivative works that are based upon the Software and/or Deliverables, shall always remain in Nuance and/or its licensor(s)." The 2011 Partner Agreement further included a 90-day termination clause.
- 22. The accompanying Evaluation and Demonstration License, attached as Addendum B to the 2011 Partner Agreement, grants Omilia "a non-exclusive, temporary right (for the duration of the applicable license key provided) to internally evaluate and test the software" and to "build application(s) incorporating the Software for evaluation, prototyping and demonstration purposes only in accordance with the terms of this Addendum." However, the Evaluation and Demonstration License further states in Section 2.2 that "The Software is copyrighted."

Unauthorized copying of the Software, including Software that has been merged of included with other software, is expressly forbidden."

- 23. The accompanying Value Added Reseller License, attached as Addendum D1 to the 2011 Partner Agreement, grants Omilia a "non-exclusive, non-transferable, non-assignable license restricted to the Territory, to, directly or through Third Parties" to bundle Nuance's software or incorporate it into Designated Applications and license it to end users. Pursuant to Section 4.1 of the 2011 Value Added Reseller License, Omilia was further permitted to purchase copies of Nuance Products at a discount off of Nuance's Product and Price List. However, Omilia was not authorized to distribute the Nuance software as a standalone product.
- 24. On or around May 4, 2012, the parties entered into Amendment 1 to the 2011 Partner Agreement. Among other changes, Amendment 1 assigned the rights of Nuance Communications International BVBA in the 2011 Partner Agreement to Nuance Communications Ireland Ltd.
- 25. From January 11, 2011 until January 31, 2014, Omilia was a reseller of Nuance automatic speech recognition and text-to-speech technology under the 2011 Partner Agreement and its addenda and amendments. During this time, it sent purchase orders to Nuance for licenses and related products totaling over \$140,000.
- 26. The languages related to the various applications Omilia deployed on behalf of end users during its time as a reseller for Nuance include Ukrainian, Greek, Romanian, and Russian. There is no apparent reason for Omilia to have required access to any other languages.
- 27. As Omilia itself repeatedly acknowledged, Nuance technology was a key ingredient to Omilia's success. This is illustrated by the following diagram from a 2011 Omilia presentation:



28. At least as early as 2013, Omilia was in breach of the 2011 Partner Agreement via the under-reporting of required licenses for its end user applications. For example, Omilia's website dating back to 2014 describes various case studies such as projects put in place for NTS Russia, Alfa Bank Ukraine, ENEL Romania or Hellas Online. In these case studies, Omilia describes the project details indicating that the traffic handled deals with millions of interactions per year and that they use Nuance's ASR technology. The number of licenses required to service projects with such large call volumes would have been significantly larger than the number of licenses purchased by Omilia during its time as a Nuance reseller. As a further example, Creos

Bank's forty-five-port IVR required forty-five Nuance ASR licenses, but Omilia purchased only five Nuance ASR Licenses for this application.

- 29. Omilia further breached the 2011 Partner Agreement by misusing demonstration copies of Nuance software obtained under Nuance Evaluation Licenses. Use of Nuance Evaluation Licenses were limited to four ports for a maximum of forty-five days. However, on information and belief, Omilia had approximately twenty active pilots and was using the same Evaluation Licenses for each pilot.
- 30. Accordingly, due at least in part to this conduct by Omilia, by letter dated October 30, 2013, Nuance provided Omilia notification of termination of the 2011 Partner Agreement. By the terms of the Agreement, such termination was to be effective in 90 days, on January 31, 2014.

Omilia's Unauthorized Copying of Nuance's Proprietary ASR Technology

- Agreement, Omilia commenced efforts to identify a replacement ASR for the Nuance ASR that it had been reselling.² Ultimately, Omilia has alleged, it "was not able to find a new partner that could provide adequate ASR technology" and therefore "decided to develop its own ASR technology."³ Omilia launched what it has called "100% Omilia technology: Omilia ASR with Omilia DiaManT system (NLU and DM)" just a few months after its development effort purportedly started.⁴ Upon information and belief, much or all development work done by Omilia was performed in Greece or Cyprus.
- 32. Omilia was able to develop its ASR technology as well as multiple languages at a much more rapid pace than could be reasonably accomplished by a small company with few

² Canadian Statement of Claim ¶ 41.

³ Canadian Statement of Claim ¶ 42.

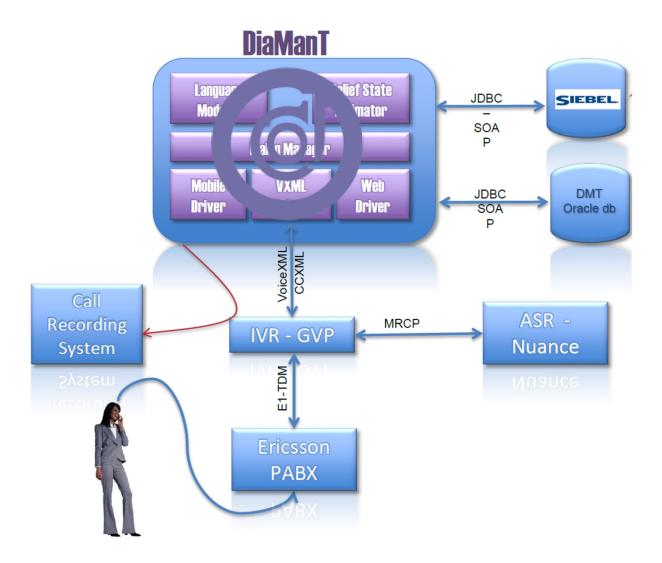
⁴ Canadian Statement of Claim ¶ 44.

engineers and a short history in ASR technology. Upon information and belief, during this time-period, and in contrast with Omilia's implausibly-fast product development times, companies with a depth of experience and significant resources dedicated to ASR technology required dozens of person-years to develop a high-performing ASR engine that supported only a handful of languages.

- 33. As a result of the abnormally rapid pace of Omilia's product development, Nuance has long suspected that Omilia took advantage of its role as a Nuance reseller and short-cut its ASR development process, but had been unable to determine how Omilia had done so.
- 34. Omilia's recent conduct and disclosures have finally started to shed light on the true nature of Omilia's long-concealed misdeeds. On January 19, 2018, Nuance sent Omilia a demand to audit Omilia's and (through Omilia) third parties' records regarding Omilia's performance of its obligations under the 2011 Partner Agreement. On February 7, 2018, Omilia refused to permit the requested audit, claiming the request, which was expressly based on Section 4.4 of Addendum D.1 to the 2011 Partner Agreement, was "unfounded." This refusal heightened Nuance's awareness of potential misconduct by Omilia in regards to Nuance's intellectual property.
- 35. On March 4, 2020, Omilia filed its Statement of Claim before the Ontario Superior Court of Justice in Omilia Natural Language Solutions, Ltd. v. Nuance communications, Inc., CV20006374350000 ("Canadian Complaint"). A copy of the Canadian Complaint is on file in this action as Docket No. 78. Paragraph 43 of the Canadian Complaint states, "Given the *data Omilia had the foresight to collect on prior projects*, it was able to develop a high performing ASR technology." (emphasis added). This sentence constitutes an admission by Omilia that it was able to develop its ASR product after termination of the Nuance Agreement, by virtue of "data" that it had "collected" on "prior projects" namely, projects in which Nuance's ASR technology was

incorporated into the product sold or resold by Omilia. This remarkable admission caused Nuance to conduct further, deeper investigations to determine what "data" Omilia had "collected."

- 36. After the filing of the Canadian Complaint and other communications by Omilia at around the same time in March 2020, Nuance began investigating the potential use of additional Nuance proprietary information by Omilia during its time as a Nuance reseller. Nuance's investigation led to two further discoveries. First, on information and belief, Omilia made recordings of live customer calls to use as training data for its ASR product. Second, even after termination of the Nuance Agreement, Omilia downloaded hundreds of Nuance software products and language packs including dozens upon dozens of languages that had never been part of the Nuance-Omilia relationship.
- 37. Further, on April 15, 2020, in its supplemental responses to written discovery served by Nuance in this litigation Omilia further explained that "Omilia NLS was able to quickly build the omASR versions by utilizing . . . (ii) the training data that Omilia NLS had collected over the years from its customers." *See* Omilia's Second Supplemental Responses to Plaintiff's First Set of Interrogatories (Nos. 1, 2, 4-7) at Interrogatory No. 2. Omilia's recording of live calls ("Call Recording System") is illustrated in this diagram from 2013:



38. Omilia has described the use of these live call recordings as training data as critical to the performance of its proprietary deepASR engines.⁵

Why deepASR® succeeds where others fail?

Your customers do not speak one single language — in reality your customers have a very wide range of accents and ways of expressing themselves. In todays globalized economy there is no "one size fits all" for any language model. In the past strong accents, slang and ethnic vocabulary make companies nervous about new speech technologies. This reservation towards speech technologies stems from over-promised and under-delivered solutions from our competitors, that just didn't quite work outside their lab.

In many cases the sound quality reaching the call center can be very poor due to many reasons — because most recognition engines are trained in a laboratory to understand perfect quality sound, they inevitably fail in the real world where sound quality is usually sub-par. Omilia has solved this problem by training our recognition models with real world call center audio to optimize the language and acoustic models of our ASR engine. With this personalized approach to speech recognition Omilia reached unprecedented accuracy in speech to text transcription.

⁵ https://omilia.com/speech-recognition/ (annotated by counsel).

39. In addition to these discoveries of Omilia's recording of live calls as training data, Nuance investigated which products Omilia had purchased during the term of the Nuance-Omilia Agreement. This led to the discovery that *after* Nuance sent the notice of termination on October 31, 2013, Omilia downloaded thirty-three files prior to the effective date of the termination on January 31, 2014. These downloads were downloaded by a user logged in as dvassos@omilia.com. On information and belief, dvassos@omilia.com is the email address for Dimitris Vassos, the CEO of Omilia. The downloaded files included the following:

dvassos@omilia.com	11/7/2013	Recognizer 10/Recognizer 10.2/Recognizer 10.2.4/NRec-10.2.4-
dvassos@oniina.com	13:26	x86_64-linux.tar.gz
dvassos@omilia.com	11/7/2013	Recognizer 10/Recognizer 10.2/Recognizer 10.2.4/NRec-10.2.4-
	13:26	x86_64-windows.zip
A	11/14/2013	Recognizer 10/Languages/uk-UA_Ukrainian_Ukraine/NRec-uk-
dvassos@omilia.com	5:17	UA-10.0.0-10.1.0.i686-linux.tar.gz
dynagas@amilia.aam	11/14/2013	Recognizer 10/Languages/uk-UA_Ukrainian_Ukraine/NRec-uk-
dvassos@omilia.com	5:17	UA-10.0.0-10.1.0.x86_64-windows.zip
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/ru-RU_Russian-Russian
dvassos@omma.com	5:18	Federation/NRec-ru-RU-10.0.0-10.1.0.i686-linux.tar.gz
dvaggag@amilia.aam	11/14/2013	Recognizer 9/Recognizer 9.0/Languages/uk-UA - Ukrainian-
dvassos@omilia.com	5:19	Ukraine/NRec-9.0.0-uk-UA.i386-rhel3.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/es-AR Spanish-Argentina/NRec-es-AR-
dvassos@omma.com	5:31	10.0.0-10.1.0.i686-linux.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/es-CO_Spanish-Colombia/NRec-es-CO-
dvassos@oniina.com	5:38	10.0.0-10.1.0.i686-linux.tar.gz
dynagaa@amilia.aam	11/14/2013	Recognizer 10/Languages/es-ES_Spanish-Spain/NRec-es-ES-
dvassos@omilia.com	5:39	10.0.0-10.1.0.i686-linux.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/eu-ES_Basque-Spain/NRec-eu-ES-
dvassos@oniina.com	5:39	10.0.0-10.1.0.i686-linux.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/ca-ES_Catalan-Spain/NRec-ca-ES-
dvassos@oniina.com	5:40	10.0.0-10.1.0.i686-linux.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/gl-ES - Galician-Spain/NRec-gl-ES-
dvassos@oniina.com	5:40	10.0.0-10.2.0.i686-linux.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/va-ES - Valencian-Spain/NRec-va-ES-
dvassos@oniina.com	5:41	10.0.0-10.2.0.i686-linux.tar.gz
dvassas@amilia.com	11/14/2013	Recognizer 10/Languages/it-IT_Italian-Italy/NRec-it-IT-10.0.0-
dvassos@omilia.com	5:42	10.1.0.i686-linux.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/nl-BE_Dutch-Belgium/NRec-nl-BE-
uvassos@omma.com	5:42	10.0.0-10.1.0.i686-linux.tar.gz
dvassos@omilia.com	11/14/2013	Recognizer 10/Languages/pl-PL_Polish-Poland/NRec-pl-PL-10.0.0-
uvassos@oiiiiia.com	5:43	10.1.0.i686-linux.tar.gz

dvassos@omilia.com	11/14/2013 6:42	Recognizer 10/Languages/tr-TR_Turkish-Turkey/NRec-tr-TR-10.0.1-10.2.0.i686-linux.tar.gz
dvassos@omilia.com	11/25/2013 8:59	Nuance Speech Server 5/NSS 5.1/NSS 5.1.9/NSS-5.1.9-i386-linux.tar.gz
dvassos@omilia.com	11/25/2013 9:00	Nuance Speech Server 5/NSS 5.1/NSS 5.1.9/NSS-5.1.9-doc.zip
dvassos@omilia.com	11/25/2013 9:01	Nuance Speech Server 5/NSS 5.1/NSS 5.1.9/NSS-5.1.9-doc.zip
dvassos@omilia.com	11/25/2013 9:01	Nuance Speech Server 5/NSS 5.1/NSS 5.1.9/NSS-5.1.9-i386-linux.tar.gz
dvassos@omilia.com	11/25/2013 9:01	Nuance Speech Server 5/NSS 5.1/NSS 5.1.9/NSS-5.1.9-i386-linux.tar.gz
dvassos@omilia.com	11/25/2013 9:03	Nuance Speech Server 6/NSS 6.2/NSS 6.2.5/NSS-6.2.5-i686-linux.tar.gz
dvassos@omilia.com	11/25/2013 9:05	Nuance Speech Server 6/NSS 6.2/NSS 6.2.5/NSS-6.2.5-i686-linux.tar.gz
dvassos@omilia.com	11/25/2013 9:06	Recognizer 9/Recognizer 9.0/Recognizer 9.0.20/NRec-9.0.20-doc.zip
dvassos@omilia.com	11/25/2013 9:06	Recognizer 9/Recognizer 9.0/Recognizer 9.0.20/NRec-9.0.20-i386-rhel3.tar.gz
dvassos@omilia.com	11/25/2013 9:08	Recognizer 9/Recognizer 9.0/License/eval-rec-9.lic
dvassos@omilia.com	11/25/2013 9:08	Recognizer 10/License/sdk-eval-recognizer10_license.lic
dvassos@omilia.com	11/25/2013 9:08	Recognizer 10/License/sdk-eval-recognizer10_license.lic
dvassos@omilia.com	11/26/2013 10:03	Recognizer 9/Recognizer 9.0/License/eval-rec-9.lic
dvassos@omilia.com	12/3/2013 7:39	OA&M - Core Services - License Manager/Core Services/Core Services 4.0.7/Nuance_Core_Services-4.0.7-i386-linux.tar.gz
dvassos@omilia.com	1/7/2014 6:01	Engines/Vocalizer Network 5.0/License/NVN_5.0_SDK_license.lic
dvassos@omilia.com	1/30/2014 6:25	Engines/Vocalizer Network 5.7/License/sdk-eval-NVN5_7_license.lic

40. Further, Nuance discovered that *after* January 31, 2014, the effective date of termination, Omilia continued to download *hundreds* of Nuance files, including dozens of languages and products that it had never purchased from Nuance. Again, these were downloaded by a user logged in as dvassos@omilia.com, which, on information and belief, is the email address

for Dimitris Vassos, the CEO of Omilia. The post-January 31, 2014 downloads, referred to collectively herein as the "Software," included the following:

dvassos@omilia.com	2/12/2014 5:10	Recognizer 9/Recognizer 9.0/License/eval-rec-9.lic
dvassos@omilia.com	2/13/2014 4:04	Engines/Vocalizer Network 5.7/License/sdk-eval- NVN5_7 license.lic
dvassos@omilia.com	2/18/2014 3:45	Voices/Vocalizer 5/Standard/pl-PL_Polish-Poland/NVN_5.0.2_pl_pl_Agata_linux.zip
dvassos@omilia.com	2/18/2014 3:46	Voices/Vocalizer 5/Standard/pl-PL_Polish-Poland/NVN_5.0.2_Voice_MSI_pl_pl_Agata_windows.zip
dvassos@omilia.com	2/19/2014 11:09	Recognizer 10/License/sdk-eval-recognizer10_license.lic
dvassos@omilia.com	2/19/2014 11:09	Recognizer 10/License/sdk-eval-recognizer10_license.lic
dvassos@omilia.com	2/23/2014 15:36	Nuance Speech Server 6/NSS 6.2/NSS 6.2.6/NSS-6.2.6-i686-linux.tar.gz
dvassos@omilia.com	2/23/2014 15:36	Nuance Speech Server 6/NSS 6.2/NSS 6.2.6/NSS-6.2.6-i686-linux.tar.gz
dvassos@omilia.com	2/23/2014 15:41	Recognizer 10/Recognizer 10.2/Recognizer 10.2.4/NRec-10.2.4-x86_64-linux.tar.gz
dvassos@omilia.com	3/11/2014 6:21	Voices/Vocalizer 5/Standard/fr-FR_France- French/NVN_5.0.0_fr_fr_Audrey_bet1_i686-linux.zip
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/gu-IN_Gujarati-India/NRec-gu-IN-
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# / # = = = = = = = = = = = = = = = = =	8:17	10.1.0.i686-linux.tar.gz
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/th-TH_Thai-Thailand/NRec-th-TH-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/bn-BD-Bengali-Bengladesh/NRec-bn-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/es-US_Spanish-United States/NRec-es-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/en-ZA_English-South Africa/NRec-en-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/ml-IN_Malayalam_India/NRec-ml-IN-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/mr-IN_Marathi_India/NRec-mr-IN-
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dvossas@amilia aam	3/13/2014	Recognizer 10/Languages/nl-NL_Dutch-Netherlands/NRec-nl-NL-
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	3/13/2014	Recognizer 10/Languages/sr-RS Serbian-Republic of Serbia/NRec-
dvassos@omilia.com	11:50	sr-RS-10.0.0-10.1.0.x86 64-windows.zip
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1	3/13/2014	Recognizer 10/Languages/ta-IN_Tamil-India/NRec-ta-IN-10.0.0-
dvassos@omilia.com	11:59	10.1.0.x86_64-windows.zip
dynagag@amilia	3/13/2014	Recognizer 10/Languages/te-IN_Telugu_India/NRec-te-IN-10.0.0-
dvassos@omilia.com	11:59	10.1.0.x86_64-windows.zip
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/th-TH_Thai-Thailand/NRec-th-TH-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/tr-TR_Turkish-Turkey/NRec-tr-TR-
avasos@omma.com	12:01	10.0.1-10.2.0.x86_64-windows.zip
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/tr-TR_Turkish-Turkey/NRec-tr-TR-
uvassos@omma.com	12:01	10.0.0-10.1.0.x86_64-windows.zip

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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/zh-CN Mandarin-China/NRec-zh-CN-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/va-ES - Valencian-Spain/NRec-va-ES-
dvassos@omma.com	12:03	10.0.0-10.2.0.x86_64-windows.zip
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/ur-IN_Urdu-India/NRec-ur-IN-10.0.0-
dvassos@omma.com	12:05	10.1.0.x86_64-windows.zip
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/ur-PK_Urdu-Pakistan/NRec-ur-PK-
avassos@omma.com	12:06	10.0.0-10.1.0.x86_64-windows.zip
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/de-DE_German-Germany/NRec-de-DE-
avassos(comma.com	12:11	9.0.0-10.0.0.x86_64-windows.zip
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/en-AU_English-Australia/NRec-en-AU-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/nl-NL_Dutch-Netherlands/NRec-nl-NL-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/nl-NL_Dutch-Netherlands/NRec-nl-NL-
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	3/13/2014	Recognizer 10/Languages/nl-NL Dutch-Netherlands/NRec-nl-NL-
dvassos@omilia.com	12:19	10.0.1-10.2.0.x86 64-windows.zip
	3/13/2014	Recognizer 10/Languages/nl-NL Dutch-Netherlands/NRec-nl-NL-
dvassos@omilia.com	12:19	10.0.1-10.2.0.x86 64-windows.zip
	3/13/2014	Recognizer 10/Languages/nl-NL Dutch-Netherlands/NRec-nl-NL-
dvassos@omilia.com	12:20	9.0.0-10.0.0.i686-linux.tar.gz
	3/13/2014	Recognizer 10/Languages/nl-NL Dutch-Netherlands/NRec-nl-NL-
dvassos@omilia.com	12:21	9.0.0-10.0.0.x86_64-windows.zip
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dvassos@omilia.com	12:27	en-GB-9.0.0-10.0.0.i686-linux.tar.gz
dvoggag@a:1!	3/13/2014	Recognizer 10/Languages/en-GB_English-United Kingdom/NRec-
dvassos@omilia.com	12:27	en-GB-9.0.0-10.0.0.x86_64-windows.zip
dynagag@amilia.aam	3/13/2014	Recognizer 10/Languages/es-US_Spanish-United States/NRec-es-
dvassos@omilia.com	12:28	US-9.0.0-10.0.0.i686-linux.tar.gz
dvaggag@amilia	3/13/2014	Recognizer 10/Languages/es-US_Spanish-United States/NRec-es-
dvassos@omilia.com	12:28	US-9.0.0-10.0.0.x86_64-windows.zip
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/fr-CA_French-Canada/NRec-fr-CA-
	12:29	9.0.0-10.0.0.i686-linux.tar.gz
dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/fr-CA_French-Canada/NRec-fr-CA-
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dvassos@omilia.com	3/13/2014	Recognizer 10/Languages/fi-FI_Finnish-Finland/NRec-fi-FI-10.0.0-
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dvassos@omilia.com	3/14/2014	Recognizer 10/Languages/fi-FI_Finnish-Finland/NRec-fi-FI-10.0.1-
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dvassos@omilia.com	3/14/2014	Recognizer 10/Languages/ar-JO_Arabic-Jordan/NRec-ar-JO-10.0.0-
uvassos@omma.com	8:37	10.1.0.x86_64-windows.zip
dvassos@omilia.com	3/14/2014	Recognizer 10/Languages/ar-WW_Arabic-WorldWide/NRec-ar-
avassos(comma:com	8:38	WW-10.0.0-10.1.0.x86_64-windows.zip
dvassos@omilia.com	3/14/2014	Recognizer 10/Languages/as-IN_Assamese-India/NRec-as-IN-
a vasses community on	8:38	10.0.0-10.1.0.x86_64-windows.zip
dvassos@omilia.com	3/14/2014	Recognizer 10/Languages/bn-IN_Bengali-India/NRec-bn-IN-10.0.0-
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dvassos@omilia.com	3/14/2014	Recognizer 10/Languages/bg-BG_Bulgarian-Bulgaria/NRec-bg-BG-
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_	8:40 3/14/2014	BD-10.0.0-10.2.0.x86 64-windows.zip
dvassos@omilia.com	3/14/2014 8:41	Recognizer 10/Languages/bh-IN_Bihari-India/NRec-bh-IN-10.0.0-10.1.0.x86 64-windows.zip
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dvassos@omilia.com	8:51	10.0.0-10.1.0.i686-linux.tar.gz
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dvassos@omilia.com	8:53	10.0.0-10.1.0.x86 64-windows.zip
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dvassos@omilia.com	9:17	HK-10.0.0-10.1.0.i686-linux.tar.gz
dvassos@omilia.com	3/14/2014	Recognizer 10/Languages/cn-HK_Cantonese-Hong Kong/NRec-cn-
dvassos@omma.com	9:17	_ 1
dvassos@omilia.com	5/6/2014	Recognizer 10/Languages/en-ZA_English-South Africa/NRec-en-
a vassos a communication	13:16	ZA-10.0.0-10.1.0.i686-linux.tar.gz
dvassos@omilia.com	5/6/2014	Recognizer 10/Languages/en-ZA_English-South Africa/NRec-en-
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dvassos@omilia.com	9/3/2014	Nuance Vocalizer for Network/Engines/Vocalizer Network
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dvassos@omilia.com	7:42	Recognizer 9/Recognizer 9.0/License/eval-rec-9.lic
	1.72	

dvassos@omilia.com	9/16/2014 9:02	Recognizer 10/License/sdk-eval-recognizer10_license.lic
dvassos@omilia.com	10/15/2014 5:43	Recognizer 10/License/sdk-eval-recognizer10_license.lic
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dvassos@omilia.com	11/12/2014 7:50	Recognizer 9/Recognizer 9.0/License/eval-rec-9.lic
dvassos@omilia.com	11/24/2014 10:04	Nuance Vocalizer for Network/Engines/Vocalizer Network 5.0/License/NVN 5.0 SDK license.lic
dvassos@omilia.com	12/1/2014 8:46	Recognizer 9/Recognizer 9.0/License/eval-rec-9.lic
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dvassos@omilia.com	12/8/2014 7:43	Nuance Speech Server 6/NSS 6.2/NSS 6.2.7/NSS-Client-6.2.7-i686-linux.tar.gz
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dvassos@omilia.com	1/13/2015 9:09	Recognizer 10/License/sdk-eval-recognizer10_license.lic
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41. The Software consists of original works of authorship that are subject to copyright protection. Nuance is the owner of the copyrights in the Software, including United States copyright registrations for the Software, namely U.S. Copyright No. TX0008868884 (entitled Nuance Recognizer Software v. 9.0.20); U.S. Copyright No. TX0008869009 (entitled Nuance Recognizer Software v. 10.2.4); U.S. Copyright No. TX0008869005 (entitled Nuance Recognizer Software v. 10.2.6); U.S. Copyright No. TX0008869004 (entitled Nuance Speech Server Software

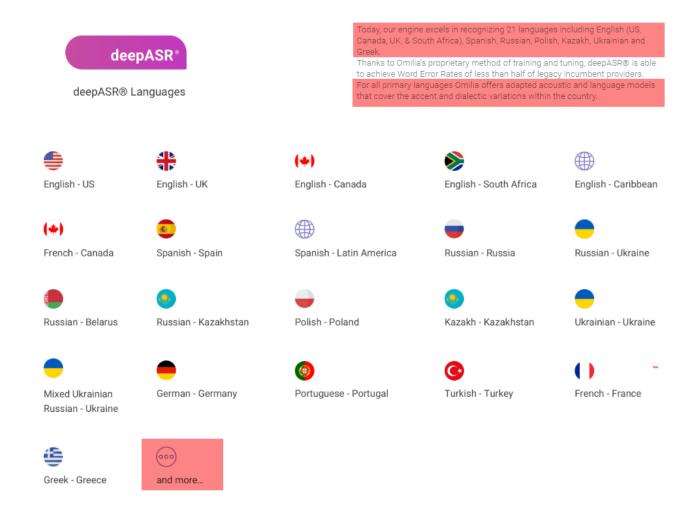
- v. 6.2.5); U.S. Copyright No. TX0008869008 (entitled Nuance Speech Server Software v. 6.2.6); and U.S. Copyright No. TX0008869011 (entitled Nuance Speech Server Software v. 6.2.7) (collectively the "Copyrights").
- 42. Nuance's downloading of the proprietary Software was unauthorized and unlicensed.
- 43. Omilia's download of the Software was not authorized by the 2011 Partner Agreement or its addenda, particularly because the downloading of the Software by Omilia occurred after the effective date of the termination of the 2011 Partner Agreement on January 31, 2014.
- 44. Omilia was aware of Nuance's copyrights in the Software and that unauthorized copying of the Software is expressly forbidden.⁷
- 45. On information and belief, Omilia's projects put in place for NTS Russia, Alfa Bank Ukraine, ENEL Romania or Hellas Online involved only Russian, Ukranian, Romanian, and Greek language recognizers.
- 46. Omilia represents that its ASR engines recognize "21 languages, including English (US, Canada, UK, and South Africa), Russian, Polish, Kazakh, Ukrainian, and Greek . . . and more." Each of these languages were included in the Software. On information and belief, Omilia has incorporated the Software into its deepASR technology by, among other things, making use

⁶ Fourteen additional copyright registrations are pending and were delayed due to COVID-related process changes at the U.S. Copyright Office. Nuance anticipates seeking leave to amend further, solely for the purpose of adding the additional copyright certificate numbers, as soon as they issue.

⁷ Addendum B to the 2011 Partner Agreement (Evaluation and Demonstration License) at Section

⁸ <u>https://omilia.com/technology/dnn-speech-recognition/</u> (annotated by counsel).

of Nuance's language packs in the Software to develop and deploy such languages as part of its product offerings.



47. On information and belief, Omilia's use and copying of Nuance's proprietary and copyrighted Software enables Omilia to improperly compete for Nuance's customers and revenue. On information and belief, Omilia increased its market share and improperly took customers and revenue from Nuance because it copied Nuance's intellectual property.

The Asserted Patents

48. The '905 Patent is titled, "In-the-field adaptation of a large vocabulary automatic speech recognizer (ASR)." The U.S. Patent and Trademark Office ("PTO") issued the '905 Patent on March 17, 2009. Nuance is the owner by assignment of all rights, title, and interests in and to

the '905 Patent, including all rights to bring actions and recover damages for infringement thereof.

A true and correct copy of the '905 Patent is attached as **Exhibit A**.

- 49. The '993 Patent is titled, "Speech recognition based on pronunciation modeling." The PTO issued the '993 Patent on September 10, 2013. Nuance is the owner by assignment of all rights, title, and interests in and to the '993 Patent, including all rights to bring actions and recover damages for infringement thereof. A true and correct copy of the '993 Patent is attached as **Exhibit B**.
- 50. The '839 Patent is titled, "Using an automated speech application environment to automatically provide text exchange services." The PTO issued the '839 Patent on September 27, 2011. Nuance is the owner by assignment of all rights, title, and interests in and to the '839 Patent, including all rights to bring actions and recover damages for infringement thereof. A true and correct copy of the '839 Patent is attached as **Exhibit C**.
- 51. The '534 Patent is titled, "Dynamically extending the speech prompts of a multimodal application." The PTO issued the '534 Patent on August 27, 2013. Nuance is the owner by assignment of all rights, title, and interests in and to the '534 Patent, including all rights to bring actions and recover damages for infringement thereof. A true and correct copy of the '534 Patent is attached as **Exhibit D**.
- 52. The '804 Patent is titled, "Using a complex events processor (CEP) to direct the handling of individual call sessions by an interactive voice response (IVR) system." The PTO issued the '804 Patent on February 19, 2013. Nuance is the owner by assignment of all rights, title, and interests in and to the '804 Patent, including all rights to bring actions and recover damages for infringement thereof. A true and correct copy of the '804 Patent is attached as **Exhibit E**.

- 53. The '532 Patent is titled, "Supporting multi-lingual user interaction with a multimodal application." The PTO issued the '532 Patent on December 9, 2014. Nuance is the owner by assignment of all rights, title, and interests in and to the '532 Patent, including all rights to bring actions and recover damages for infringement thereof. A true and correct copy of the '532 Patent is attached as **Exhibit F**.
- 54. The '688 Patent is titled, "Multi-lingual speech recognition with cross-language context modeling." The PTO issued the '688 Patent on December 12, 2006. Nuance is the owner by assignment of all rights, title, and interests in and to the '688 Patent, including all rights to bring actions and recover damages for infringement thereof. A true and correct copy of the '688 Patent is attached as **Exhibit G**.
- 55. The '925 Patent is titled, "Method and apparatus for phonetic context adaptation for improved speech recognition." The PTO issued the '925 Patent on February 14, 2006. Nuance is the owner by assignment of all rights, title, and interests in and to the '925 Patent, including all rights to bring actions and recover damages for infringement thereof. A true and correct copy of the '925 Patent is attached as **Exhibit H**.
- 56. The '925 Patent, at col. 3:30, states that its invention "is illustrated within the context of the 'ViaVoice' speech recognition system which is manufactured by International Business Machines Corporation" ("IBM"). Nuance was the exclusive licensee of ViaVoice during the time the '925 Patent application was pending. The application leading to the '925 Patent was filed on November 13, 2001. Nuance's predecessor, ScanSoft, acquired the exclusive license to

ViaVoice in 2003.⁹ ScanSoft and Nuance merged in 2005.¹⁰ The '925 Patent names IBM as the initial assignee. The '925 Patent was assigned to Nuance in December 2008.

Omilia's Patent Infringement

- 57. Rather than attempt to develop its own products to compete fairly with Nuance in the marketplace following the termination of the relationship, Omilia replicated Nuance's innovative technology and infringed Nuance's valuable intellectual property.
- 58. According to Omilia's website, Omilia entered the "North American market" in 2015, and in 2016 "deployed the first ever truly Conversational Virtual Agent solution for Royal Bank of Canada, the largest and most innovative bank in the country." The website further asserts that "[t]oday, [Omilia is] working with a number of financial institutions and telecom operators in the USA, who want to offer their customer base a truly user-friendly, effective, omnichannel self-service solution, while slashing operating costs." ¹²
- 59. Omilia describes its software platform as including "Artificial Intelligence and Natural Language Understanding," "Conversational Virtual Agents," "Natural Language UI," "an "intelligent Dialog Management platform (DiaManT®)," "an innovative Natural Language Understanding engine (deepNLU®)," and "the most accurate on-premise ASR engine (deepASR®) in the world, with accuracies in the Banking and Telecoms domains touching human-level performance."¹³

⁹See IBM Desktop ViaVoice Website, available at

http://web.archive.org/web/20180609021118/http://www-01.ibm.com:80/software/pervasive/viavoice.html) (Dkt. 85-3).

¹⁰ Dkt. 85-4.

¹¹ https://omilia.com/about-us/.

 $^{^{12}}$ *Id*.

¹³ *Id*.

60. Omilia claims that these technologies "offer a true conversational IVR experience" and "ensure[] accurate speaker identification." ¹⁴

61. Again according to Omilia's website, Omilia integrates or packages these technologies into an "Omni-Channel Conversational Platform" it calls "DiaManT®" that "provides the infrastructure and core capabilities to power an omni-channel conversational experience." Omilia describes this platform as a "single unified platform for conversational customer service on all channels¹⁵" (the "Accused IVR Platform").

- 62. Omilia asserts that it can structure the Accused IVR Platform depending on the particular application and customer needs, including "Xpert® Packages" for banking, telecoms, insurance, travel, and utilities customers. The Accused IVR Platform can also include an "omIVR Call Center" that "is a "telco-grade IVR capability that allows DiaManT® to easily integrate with [an] enterprise's telephony."
- 63. Omilia further states that using "Digital Channel Plug-in's," it can configure the Accused IVR Platform to operate with mobile phones or text-based applications like SMS text-messaging, email, or Facebook Messenger.¹⁸
- 64. Upon information and belief, the Accused IVR Platform infringes one or more claims of the Asserted Patents, including at least one claim of each of the Asserted Patents, as described below.
- 65. Omilia has known about the '905 Patent, the '993 Patent, and the '804 Patent and its infringement thereof since at least October 9, 2018, when Omilia received a letter from Nuance

¹⁴ *Id*.

¹⁵ https://omilia.com/technology/omni-channel-conversational-platform/; https://omilia.com/.

¹⁶ *Id*.

¹⁷ *Id*.

¹⁸ *Id*.

identifying these patents and the aspects of Accused IVR Platform that meet the claims of the patents. On or around October 22, 2018, Omilia sent a response letter stating that it would examine the patents and provide a response. On or around February 12, 2019, Nuance finally received follow-up correspondence, but said correspondence contained no substantive response on the identified issues. On or around March 12, 2019, Nuance received additional correspondence simply stating, without explanation, that "Omilia does not infringe the Nuance patents" and referencing unidentified alleged "prior art publications that are relevant to the Nuance patent claims." On or around March 15, 2019, Nuance requested further details and a substantive response from Omilia, but has not received any response.

- 66. Upon information and belief, Omilia was aware of the '839, '534, '532, '688, and '925 Patents at least as of the date of the filing of this Complaint.
- 67. Omilia's infringement is deliberate, willful, and knowing, with conscious disregard of Nuance's rights, entitling Nuance to enhanced damages.
- 68. Omilia's infringement is causing irreparable harm and monetary damages to Nuance, entitling Nuance to both monetary damages and injunctive relief.

COUNT I: INFRINGEMENT OF THE '905 PATENT UNDER 35 U.S.C. § 271

- 69. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 70. Omilia and/or its customers directly infringe one or more claims of the '905 Patent under 35 U.S.C. § 271(a), including at least Claim 1, either literally or under the doctrine of equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.
 - 71. By way of example only and not limitation, Claim 1 of the '905 Patent claims:

1. A method of improving the recognition accuracy of a speech recognizer comprising the steps of:

deploying the speech recognizer in an environment to receive live input data;

receiving the live input data and an original speech signal;

without supervision, selecting at least one adaptation algorithm from a plurality of adaptation algorithms, and

applying the selected adaptation algorithm to the received live input data,

said live input data and original speech signal being in the form of speech data required for executing the adaptation algorithm, as it is being recognized to improve at least one application-specific feature for the recognition accuracy of the speech recognizer; and

redeploying the adapted speech recognizer in the target environment.

72. The Accused IVR Platform meets each element in at least Claim 1 of the '905 Patent. For example, Omilia and/or its customers utilizing the Accused IVR Platform perform a "method of improving the recognition accuracy of a speech recognizer." Omilia states that the Accused IVR Platform includes an improved automatic speech recognizer ("ASR"):¹⁹

Today we are proud to have the most accurate on-premise ASR engine (deepASR*) in the world, with accuracies in the Banking and Telecoms domains touching human-level performance. But we don't stop there: our deepNLU* engine is capable of delivering unprecedented levels of semantic accuracy in conversational dialogs never seen again in live environments, while our deepVB* Biometrics Authentication engine ensures accurate speaker identification.

73. Omilia and/or its customers utilizing the Accused IVR Platform perform the step of "deploying the speech recognizer in an environment to receive live input data." The Accused IVR Platform receives and services customer calls:²⁰

¹⁹ https://omilia.com/about-us/ (annotated by counsel).

²⁰ *Id.* (annotated by counsel); https://omilia.com/technology/omni-channel-conversational-platform/ (annotated by counsel).

Today we are proud to have the most accurate on-premise ASR engine (deepASR*) in the world, with accuracies in the Banking and Telecoms domains touching human-level performance. But we don't stop there: our deepNLU* engine is capable of delivering unprecedented levels of semantic accuracy in conversational dialogs never seen again in live environments, while our deepVB* Biometrics Authentication engine ensures accurate speaker identification.



DiaManT® is home to Omilia's deepNLU® Engine that works to extract meaning from free, unstructured language. The deepNLU® Engine makes it possible to understand customer requests with intents human-like accuracy. Because the engine is context aware and retains memory, it is capable running entire end-to-end conversations with customers.

- 74. Omilia and/or its customers utilizing the Accused IVR Platform perform the step of "receiving the live input data and an original speech signal." The Accused IVR Platform receives live input data and an original speech signal from a caller.
- 75. Omilia and/or its customers utilizing the Accused IVR Platform perform the step of "without supervision, selecting at least one adaptation algorithm from a plurality of adaptation algorithms." Omilia touts the Accused IVR Platform as having an ASR engine that can adapt dynamically to recognize speech when it detects different languages or accents. Upon information and belief, the Accused IVR Platform achieves this at least by selecting adaptation algorithms tailored for different languages or accents:²¹

34

²¹ <u>https://omilia.com/technology/dnn-speech-recognition/</u> (annotated by counsel).

deepASR®

Our Automatic Speech Recognition engine leverages the most advanced forms of Deep Learning, achieving unprecedented accuracy in recognition that routinely reaches human-level performance.

deepASR® Languages

Today, our engine excels in recognizing 17 languages including English (US, Canada, UK, & South Africa), Spanish, Russian, Polish, Kazakh, Ukrainian and Greek.

Thanks to Omilia's proprietary method of training and tuning, deepASR® is able to achieve Word Error Rates of less than half of legacy incumbent providers.

For all primary languages Omilia offers adapted acoustic and language models that cover the accent and dialectic variations within the country.

In many cases the sound quality reaching the call center can be very poor due to many reasons — because most recognition engines are trained in a laboratory to understand perfect quality sound, they inevitably fail in the real world where sound quality is usually sub-par. Omilia has solved this problem by training our recognition models with real world call center audio to optimize the language and acoustic models of our ASR engine. With this personalized approach to speech recognition Omilia reached unprecedented accuracy in speech to text transcription.

- 76. Omilia and/or its customers utilizing the Accused IVR Platform perform the step of "applying the selected adaptation algorithm to the received live input data." Upon information and belief, at least because the Accused IVR Platform is able to adapt to recognize and process various languages or accents as described in the previous paragraph, the Accused IVR Platform is applying selected adaptation algorithms corresponding to the user's accent or language to the live input data.
- 77. Upon information and belief, Omilia and/or its customers utilizing the Accused IVR Platform perform the step of "said live input data and original speech signal being in the form of speech data required for executing the adaptation algorithm, as it is being recognized to improve at least one application-specific feature for the recognition accuracy of the speech recognizer."

Moreover, upon information and belief the Accused IVR Platform is capable of performing such step because in order to perform effective ASR for various accents and languages, the Accused IVR Platform is configured to adapt to a change from one accent or language to another accent or language. As adaptation algorithms are deployed, at least the ability to recognize a new accent or language would represent an improvement to at least one application-specific feature. Further, upon information and belief, the Accused IVR Platform's adaptation algorithms are configured to compare speech data to determine if a new speech transcription would improve at least one application-specific feature for the recognition accuracy.

- 78. Omilia and/or its customers utilizing the Accused IVR Platform perform the step of "redeploying the adapted speech recognizer in the target environment." Upon information and belief, in order for the Accused IVR Platform to achieve satisfactory or improved recognition, the ASR is redeployed in the environment after adapting to different accents or languages through the use of the adaptation algorithms.
- 79. Omilia also induces the infringement of the '905 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows would infringe the methods claimed in the '905 Patent and by encouraging its customers to use the Accused IVR Platform in a manner that Omilia knows would infringe the methods claimed in the '905 Patent. Omilia has had knowledge of the '905 Patent since at least October 9, 2018. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States:²²

²² https://omilia.com/our-partners/ (annotated by counsel).

Partners

Omilia is dedicated to empowering both our Customer as well as our Partners to deliver and manage true conversational solutions. Through our Certified Partner Program, we have created a global network of local partners that are helping to bring the next generation of conversational user interfaces to enterprises around the world.



80. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers, which, on information and belief, have utilized the Accused IVR Platform in the United States:²³



81. Omilia also contributes to the infringement of the '905 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the

²³ *Id*.

'905 Patent since at least October 9, 2018. The Accused IVR Platform is a material part of practicing at least the methods of Claim 1 of the '905 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.

- 82. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '905 Patent.
- 83. As detailed above, Omilia has continued its infringement despite having knowledge of the '905 Patent and Nuance's infringement claims.
- 84. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 85. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT II: INFRINGEMENT OF THE '993 PATENT UNDER 35 U.S.C. § 271

- 86. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 87. Omilia and/or its customers directly infringe one or more claims of the '993 Patent under 35 U.S.C. § 271(a), including at least Claim 17, either literally or under the doctrine of equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.
 - 88. By way of example only and not limitation, Claim 17 of the '993 Patent claims:
 - 17. A computer-readable storage device having instructions stored which, when executed on a processor, cause the processor to perform operations comprising:

approximating transcribed speech using a phonemic transcription dataset associated with a speaker, to yield a language model, where the phonemic transcription dataset is based on a pronunciation model of the speaker;

incorporating, into the language model, pronunciation probabilities associated with respective unique labels for each different pronunciation of a word,

wherein the respective unique label for a most frequent word indicates a special status in the language model; and

after incorporating the pronunciation probabilities into the language model, recognizing an utterance using the language model.

- 89. The Accused IVR Platform meets each element in at least Claim 17 of the '993 Patent. For example, to the extent the preamble of Claim 17 is limiting, the Accused IVR Platform includes a "computer-readable storage device having instructions stored which, when executed on a processor, cause the processor to perform operations."
- 90. The operations capable of being performed by the Accused IVR Platform include "approximating transcribed speech using a phonemic transcription dataset associated with a speaker, to yield a language model, where the phonemic transcription dataset is based on a pronunciation model of the speaker." Omilia represents that the Accused IVR Platform has good speech recognition capabilities for various accents and languages that comes from the development of ASR models using actual recorded speech from real calls. Upon information and belief, the Accused IVR Platform does so at least by using a phonemic transcription dataset based on pronunciation models associated with various accents or languages to transcribe speech:²⁴

²⁴ https://omilia.com/technology/dnn-speech-recognition/ (annotated by counsel).

deepASR® Languages

Today, our engine excels in recognizing 17 languages including English (US, Canada, UK, & South Africa), Spanish, Russian, Polish, Kazakh, Ukrainian and Greek.

Thanks to Omilia's proprietary method of training and tuning, deepASR® is able to achieve Word Error Rates of less than half of legacy incumbent providers.

For all primary languages Omilia offers adapted acoustic and language models that cover the accent and dialectic variations within the country.

Why deepASR® succeeds where others fail?

Your customers do not speak one single language — in reality your customers have a very wide range of accents and ways of expressing themselves. In todays globalized economy there is no "one size fits all" for any language model. In the past strong accents, slang and ethnic vocabulary make companies nervous about new speech technologies. This reservation towards speech technologies stems from over-promised and under-delivered solutions from our competitors, that just didn't quite work outside their lab.

In many cases the sound quality reaching the call center can be very poor due to many reasons — because most recognition engines are trained in a laboratory to understand perfect quality sound, they inevitably fail in the real world where sound quality is usually sub-par. Omilia has solved this problem by training our recognition models with real world call center audio to optimize the language and acoustic models of our ASR engine. With this personalized approach to speech recognition Omilia reached unprecedented accuracy in speech to text transcription.

91. The operations capable of being performed by the Accused IVR Platform include "incorporating, into the language model, pronunciation probabilities associated with respective unique labels for each different pronunciation of a word." Upon information and belief, the Accused IVR Platform is capable of recognizing open-ended utterances, indicating that it uses a statistical language model ("SLM") for speech recognition. Omilia claims that the Accused IVR Platform is capable of recognizing different accents or languages while still achieving reduced error rates, indicating that the Accused IVR Platform assigns pronunciation probabilities to different pronunciations of a word. Omilia also claims that the Accused IVR Platform tracks words

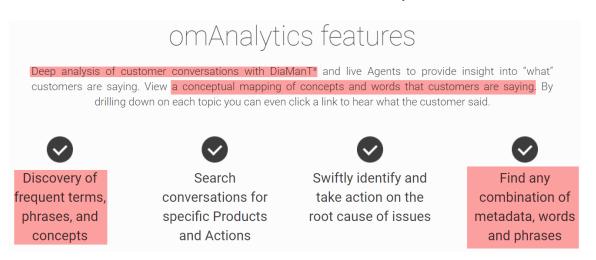
and performs statistical analysis on historical data, further indicating that the Accused IVR Platform uses probability-based techniques in its language models:²⁵

deepASR® Languages

Today, our engine excels in recognizing 17 languages including English (US, Canada, UK, & South Africa), Spanish, Russian, Polish, Kazakh, Ukrainian and Greek.

Thanks to Omilia's proprietary method of training and tuning, deepASR® is able to achieve Word Error Rates of less than half of legacy incumbent providers.

For all primary languages Omilia offers adapted acoustic and language models that cover the accent and dialectic variations within the country.



²⁵ https://omilia.com/technology/dnn-speech-recognition/ (annotated by counsel); https://omilia.com/technology/business-insights/ (annotated by counsel); https://aws.amazon.com/solutions/case-studies/Omilia/ (annotated by counsel).

But how has Omilia gotten this far? One of its major assets is the data it has from a long history of working with its client base.

Researchers at the company have built deep learning models, which they train with millions of samples of real speech. The second key to the company's success is Amazon Web Services (AWS). Storing and processing the data to train the machine learning models requires enormous compute capacity—something that was simply unaffordable for a bootstrap company of 15 people, as Omilia was in 2013.

- 92. The "respective unique label for a most frequent word" within the Accused IVR Platform"indicates a special status in the language model." Upon information and belief, the Accused IVR Platform uses a SLM and uses a probabilistic assessment to indicate special status in the language model for the most frequently used words.
- 93. "[A]fter incorporating the pronunciation probabilities into the language model," the Accused IVR Platform "recogniz[es] an utterance using the language model." Upon information and belief, at least because the Accused IVR Platform uses SLM and assigns pronunciation probabilities to different pronunciations of a word in a language model, the Accused IVR Platform recognizes utterances based on this language model.
- 94. Omilia also induces the infringement of the '993 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows infringes the '993 Patent and by encouraging its customers to use the Accused IVR Platform in a manner that Omilia knows infringes the '993 Patent. Omilia has had knowledge of the '993 Patent since at least October 9, 2018. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix

Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States. *See* ¶ 79.

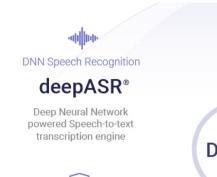
- 95. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers in the United States. See ¶ 80.
- 96. Omilia also contributes to the infringement of the '993 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the '993 Patent since at least October 9, 2018. The Accused IVR Platform is a material part of practicing at least the methods of Claim 17 of the '993 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.
- 97. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '993 Patent.
- 98. As detailed above, Omilia has continued its infringement despite having knowledge of the '993 Patent and Nuance's infringement claims.
- 99. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 100. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT III: INFRINGEMENT OF THE '839 PATENT UNDER 35 U.S.C. § 271

101. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.

- 102. Omilia and/or its customers directly infringe one or more claims of the '839 Patent under 35 U.S.C. § 271(a), including at least Claim 17, either literally or under the doctrine of equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.
 - 103. By way of example only and not limitation, Claim 17 of the '839 Patent claims:
 - 17. A system for providing text exchange services comprising:
 - a text exchange client configured to send and receive real-time text exchanges over a text exchange channel;
 - a speech application environment configured to execute an automated speech response application that permits users to interact in real-time over a voice channel; and
 - a Chatbot server configured to establish a communication session involving the text exchange client and the automated speech response application,
 - wherein the Chatbot server can dynamically convert messages between the text exchange client and the speech response application during the communication session in a manner transparent to the text exchange client and to the automated speech response application.
- 104. The Accused IVR Platform meets each element in at least Claim 17 of the '839 Patent. For example, to the extent the preamble of Claim 17 is limiting, the Accused IVR Platform includes a "system for providing text exchange services." In addition to providing speech applications, the Accused IVR Platform is configured to provide text exchange services that allow customers to interact through SMS text messaging, email, FaceBook Messenger, or other text-based applications:²⁶

https://omilia.com/ (annotated by counsel); https://omilia.com/technology/omni-channel-conversational-platform/ (annotated by counsel).



etric Auth

Voice Biometric Authentication

deepVB®

IVR-side Voice Biometric Authentication with free and unstructured speech



Dialog Management & Natural Language Understanding



Dialog Management technology that is the hub of all interactions regardless of channel Natural Language Understanding extraction engine

deepNLU®



omIVR

Telco-grade telephony SIP IVR



Digital Channel Plug-Ins

omMobile

In-App Virtual Assistant Plug-in for DiaManT to run dialogs with both speech and text

omChat

Chatbot Plug-in for DiaManT to run dialogs on text-based channels; SMS, WebChat, Messenger, etc.





DiaManT®

Omilia's Dialog Management Technology is the hub for conversational care on all channels. DiaManT® can interact with users via Speech, Text, or GUI input; inbound and outbound from the IVR, Web-Chat or even from any enabled Mobile application, delivering true continuity for seamless cross-channel service in the form of Plug-Ins; omMobile®, omChat®, omIVR®.

omChat

With the omChat plug-in DiaManT® takes the form of a ChatBot on text-based channels: SMS, Web-Chat, Email, and Facebook Messenger.

omMobile

Integrate DiaManT® into your mobile app in order to communicate with the users via Voice, Text and Touch, facilitating a multi-modal, conversational user experience, in an easier and more visually appealing way to get to the desired information faster.

- 105. The system of the Accused IVR Platform includes "a text exchange client configured to send and receive real-time text exchanges over a text exchange channel." At least because the Accused IVR Platform allows customers to perform transactions such as mobile banking through text commands, the Accused IVR Platform's constituent applications, like omChat or omMobile, must be configured to interact in real-time over a text exchange channel with another text exchange device, like a bank server.
- 106. The system of the Accused IVR Platform includes "a speech application environment configured to execute automated an automated speech response application that permits users to interact in real-time over a voice channel." At least because the Accused IVR Platform allows customers to perform transactions such as mobile banking using speech commands, the Accused IVR Platform must have a speech application environment. The speech application environment of the Accused IVR Platform is configured to execute automated speech response applications that permit users to interact in real-time over a voice channel. *See* ¶¶ 73, 104-105.
- 107. The system of the Accused IVR Platform includes "a Chatbot server configured to establish a communication session involving the text exchange client and the automated speech response application." As described above, the Accused IVR Platform is an integrated platform that includes both ASR engines for speech recognition and text exchange services with

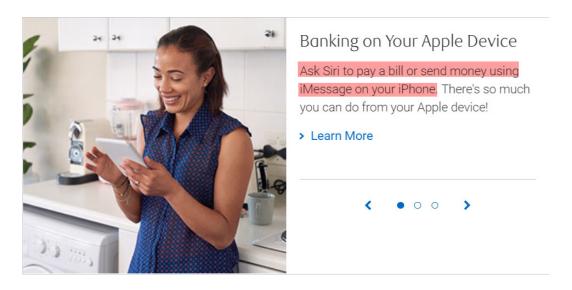
applications such as omChat and omMobile. Upon information and belief, the integrated environment of the Accused IVR Platform establishes a communication session between such ASR engines and text exchange services. Further, customers utilizing the Accused IVR Platform at least in the financial services context can conduct banking transactions through text and email or speech commands:²⁷

Pay Current and Future Bills

It's simple to manage all your bill payments—edit your payee list, pay a current bill and set up upcoming payments. Plus, you can also pay a bill using voice commands with Siri for RBC Mobile on an iPhone.

Send Money By Email, Text Message or Voice Command

Send an *Interac* e-Transfer or pay another RBC client for free by email or text message. If you have an iPhone, you can also send money using voice commands with Siri for RBC Mobile or through an iMessage.



108. The Chatbot server of the Accused IVR Platform is capable of "dynamically convert[ing] messages between the text exchange client and the speech response application during

²⁷ https://www.rbcroyalbank.com/ways-to-bank/mobile/rbc-mobile-app/index.html (annotated by counsel); https://www.rbcroyalbank.com/ways-to-bank/mobile/index.html (annotated by counsel).

the communication session in a manner transparent to the text exchange client and to the automated speech response application." As described above and below, the Accused IVR Platform is an integrated, omni-channel technology that can dynamically and automatically convert interactions between a voice recognition server channel and a text exchange channel during a communication session:²⁸

DiaManT®

The DiaManT® platform provides the infrastructure and core capabilities to power an omni-channel conversational experience, acting as a single-point of integration with enterprise systems for driving conversational dialogs on all channels.

Digital Channel Plug-in's

By leveraging DiaManT® Digital Channel Plug-in's, omMobile and omChat, the enterprise can open up all channels to be serviced by the same application, and customers can experience the same great conversational service on digital channels, with Text, Voice or GUI input.

omMobile features

DiaManT® and omMobile support cross-channel continuity and hand-off, allowing users to start their interaction on a mobile app and seamlessly continue interacting over IVR or web-chat, with full context preservation.

109. Omilia also induces the infringement of the '839 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows infringes the '839 Patent and by encouraging

²⁸ <u>https://omilia.com/technology/omni-channel-conversational-platform/</u> (annotated by counsel).

Patent. Omilia has had knowledge of the '839 Patent since at least the filing of this Complaint. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States. *See* ¶ 79.

- 110. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers in the United States. See ¶ 80.
- 111. Omilia also contributes to the infringement of the '839 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the '839 Patent at least as of the filing of this Complaint. The Accused IVR Platform is a material part of practicing at least the methods of Claim 17 of the '839 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.
- 112. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '839 Patent.
- 113. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 114. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT IV: INFRINGEMENT OF THE '534 PATENT UNDER 35 U.S.C. § 271

115. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.

- 116. Omilia and/or its customers directly infringe one or more claims of the '534 Patent under 35 U.S.C. § 271(a), including at least Claim 13, either literally or under the doctrine of equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.
 - 117. By way of example only and not limitation, Claim 13 of the '534 Patent claims:
 - 13. A computer program product for dynamically extending speech prompts of a multimodal application, the computer program product comprising:

a recordable media having computer program instructions configured to:

receive a media file having a metadata container;

retrieve, from the metadata container, a speech prompt related to content stored in the media file for inclusion in the multimodal application; and

modify, the multimodal application to include the speech prompt.

- 118. The Accused IVR Platform meets each element in at least Claim 13 of the '534 Patent. For example, to the extent the preamble of Claim 13 is limiting, the Accused IVR Platform includes a "computer program product for dynamically extending speech prompts of a multimodal application."
- 119. The Accused IVR Platform includes "a recordable media having computer program instructions." As discussed above, the Accused IVR Platform is a software platform:²⁹



²⁹ https://omilia.com/technology/omni-channel-conversational-platform/

120. The computer program instructions of the Accused IVR Platform are configured to "receive a media file having a metadata container." As discussed above, the Accused IVR Platform is configured to operate on a mobile device through an application such as omMobile, which supports user interaction through voice commands or non-voice commands like text-based exchanges. On information and belief, at least because the Accused IVR Platform saves or records call data and analyzes it for use in processing calls and/or building models, the media file of the Accused IVR Platform includes a media file (such as an audio recording) and an associated metadata container. The media file with a metadata container of the Accused IVR Platform is received as part of the process of importing the media file; see also ¶ 91.

omIVR features

omIVR executes the dialog call-flow and invokes the services of deepASR® for speech-to-text, and omTTS® for speech synthesis, through the industry standard MRCP protocol. It runs on both physical and virtual hardware, providing a highly scalable system to meet all your business and technical requirements.

om**DRTviewer** om**Analytics**® om Reports The DRTviewer® is a web-based tool that Omilia offers a web-based automated Visualize the big data generated by DiaManT® provides real-time transparency to all reporting module that presents statistical to analyze customer interactions on DiaManT®, data regarding the use of the application, conversations with the virtual agent as regardless of channel. Via the DRTviewer® making it easy to analyze user well as with live agents. omAnalytics® tool, business users can monitor live interactions and measure KPI's. provides real-time business discovery on sessions in real-time as well as search omReports® present key metrics of the what customers are actually saying, with through historical dialogs. system's performance in an analytical detailed Topic and Sentiment Analysis on natural feedback way - making it possible to identify areas language from for increased automation. consumers.

121. The computer program instructions of the Accused IVR Platform are configured to "retrieve from the metadata container, a speech prompt related to content stored in the media file for inclusion in the multimodal application." A speech prompt, as used in the '534 Patent, is "an audio phrase played by a multimodal application to provoke a response from a user," and includes

³⁰ https://omilia.com/technology/omni-channel-conversational-platform/ (annotated by counsel).

at least a text string prompt for execution by a text to speech engine or an audio prompt to be played by the multimodal device. Upon information and belief, at least because it is configured to interact with users in "unstructured" conversations, the metadata container is configured to retrieve a speech prompt related to the content stored in the media file.

122. The computer program instructions of the Accused IVR Platform are configured to "modify the multimodal application to include the speech prompt." The Accused IVR Platform includes appropriate speech prompts as part of its interactions with the caller to identify a caller's intent from collected media files reflecting a call session:³¹

omMobile features

DiaManT[®] and omMobile support cross-channel continuity and hand-off, allowing users to start their interaction on a mobile app and seamlessly continue interacting over IVR or web-chat, with full context preservation.

Much more than just Call Steering

DiaManT® allows for true end-to-end conversations in natural language. In comparison to other vendors that only provide Call Steering with rigidly structured Directed Dialog, with DiaManT® customers can speak freely and there is no pre-determined flow or structure that they have to follow. With DiaManT® there is one single application that determines both the intent of the caller as well as the delivery of self-services, so customer conversations are completely unstructured, meaning that your customers will never hear things like "say main menu to go back" — they just speak, and DiaManT® listens, understands, and

Upon information and belief, at least because the Accused IVR Platform maintains a record of an entire conversation so that it can create a customized user interaction and identify customer intent based on conversation history, the Accused IVR Platform is configured to modify the multimodal application to include the speech prompt once it identifies the user's intent based on an analysis of the metadata container associated with the particular media file reflecting the conversation history:³²

³¹ https://omilia.com/technology/omni-channel-conversational-platform/ (annotated by counsel).

³² *Id.* (annotated by counsel).



- 123. Omilia also induces the infringement of the '534 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows infringes the '534 Patent and by encouraging its customers to use the Accused IVR Platform in a manner that Omilia knows infringes the '534 Patent. Omilia has had knowledge of the '534 Patent since at least the filing of this Complaint. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States. See ¶ 79.
- 124. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers in the United States. See ¶ 80.
- 125. Omilia also contributes to the infringement of the '534 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the '534 Patent at least as of filing of this Complaint. The Accused IVR Platform is a material part of practicing at least the methods of Claim 13 of the '534 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.
- 126. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '534 Patent.

- 127. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 128. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT V: INFRINGEMENT OF THE '804 PATENT UNDER 35 U.S.C. § 271

- 129. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 130. Omilia and/or its customers directly infringe one or more claims of the '804 Patent under 35 U.S.C. § 271(a), including at least Claim 1, either literally or under the doctrine of equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.
 - 131. By way of example only and not limitation, Claim 1 of the '804 Patent claims:
 - 1. A system for managing individual call sessions of an interactive voice response (IVR) system comprising:

an interactive voice response (IVR) system configured to execute a plurality of interaction files for a call session corresponding to a calling entity in response to a unit of speech input provided by the calling entity,

wherein the IVR system converts the unit of speech input into a series of textual elements contained within event data messages, wherein the event data messages are associated with the call session by a unique Stream_ID; and

a complex events processor (CEP) configured to dynamically modify the execution of the plurality of interaction files by the IVR system for the call session based on an analysis of the event data messages, wherein said modification is contained within an action message sent by the CEP to the IVR system, wherein the action message is identified with the

Stream ID corresponding to the analyzed the event data messages.

- 132. The Accused IVR Platform meets each element in at least Claim 1 of the '534 Patent. For example, the Accused IVR Platform is a "system for managing individual call sessions of an interactive voice response (IVR) system." As discussed above, the Accused IVR Platform is a system that manages individual call sessions of an IVR system. *See* ¶¶ 73, 104-105, 108.
- 133. The Accused IVR Platform includes "an interactive voice response (IVR) system configured to execute a plurality of interaction files for a call session corresponding to a calling entity in response to a unit of speech input provided by the calling entity." The Accused IVR Platform identifies a caller's intent from collected speech units from a caller during a call session, and executes processes based on the identified intent:³³

omMobile features

DiaManT[®] and omMobile support cross-channel continuity and hand-off, allowing users to start their interaction on a mobile app and seamlessly continue interacting over IVR or web-chat, with full context preservation.

Much more than just Call Steering

DiaManT® allows for true end-to-end conversations in natural language. In comparison to other vendors that only provide Call Steering with rigidly structured Directed Dialog, with DiaManT® customers can speak freely and there is no pre-determined flow or structure that they have to follow. With DiaManT® there is one single application that determines both the intent of the caller as well as the delivery of self-services, so customer conversations are completely unstructured, meaning that your customers will never hear things like "say main menu to go back" — they just speak, and DiaManT® listens, understands, and cares.

134. The Accused IVR Platform includes an "IVR system" that "converts the unit of speech input into a series of textual elements contained within event data messages, wherein the event data messages are associated with the call session by a unique Stream_ID." The Accused IVR Platform converts speech input into text. At least because the Accused IVR Platform saves or records historic call data and analyzes it for use in building models, the text will be contained

³³ <u>https://omilia.com/technology/omni-channel-conversational-platform/</u> (annotated by counsel).

in event data messages that are associated with individual call sessions that are each assigned a unique ID for ready identification and retrieval;³⁴ see also ¶ 91.

omIVR features

omIVR executes the dialog call-flow and invokes the services of deepASR* for speech-to-text, and omTTS* for speech synthesis, through the industry standard MRCP protocol. It runs on both physical and virtual hardware, providing a highly scalable system to meet all your business and technical requirements.

om**DRTviewer**

The DRTviewer* is a web-based tool that provides real-time transparency to all customer interactions on DiaManT*, regardless of channel. Via the DRTviewer* tool, business users can monitor live sessions in real-time as well as search through historical dialogs.

om**Reports**

Omilia offers a web-based automated reporting module that presents statistical data regarding the use of the application, making it easy to analyze user interactions and measure KPI's. omReports® present key metrics of the system's performance in an analytical way — making it possible to identify areas for increased automation.

om**Analytics**®

Visualize the big data generated by DiaManT* to analyze customer conversations with the virtual agent as well as with live agents. omAnalytics* provides real-time business discovery on what customers are actually saying, with detailed Topic and Sentiment Analysis on natural language feedback from consumers.

135. The Accused IVR Platform includes "a complex events processor (CEP) configured to dynamically modify the execution of the plurality of interaction files by the IVR system for the call session based on an analysis of the event data messages." Upon information and belief, at least because the Accused IVR Platform maintains a record of an entire conversation so that it can create a customized user interaction, the Accused IVR Platform is configured to dynamically modify which interaction files to execute based on an analysis of the event data messages associated with the particular conversation history:³⁵

³⁴ https://omilia.com/technology/omni-channel-conversational-platform/ (annotated by counsel).

³⁵ *Id.* (annotated by counsel).



- 136. The Accused IVR Platform includes a system "wherein said modification is contained within an action message sent by the CEP to the IVR system, wherein the action message is identified with the Stream_ID corresponding to the analyzed the event data messages." Upon information and belief, at least because the Accused IVR Platform is configured to provide self-services for a user and identify intent based on conversation history, the Accused IVR Platform executes action messages to perform a modified task or process once it identifies the user's intent. As discussed above, at least because the Accused IVR Platform maintains historical call logs, upon information and belief actions messages from each call are identified through a unique ID from each call.
- 137. Omilia also induces the infringement of the '804 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows infringes the '804 Patent and by encouraging its customers to use the Accused IVR Platform in a manner that Omilia knows infringes the '804 Patent. Omilia has had knowledge of the '804 Patent since at least October 9, 2018. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States. *See* ¶ 79.

- 138. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers in the United States. $See \, \P \, 80$.
- 139. Omilia also contributes to the infringement of the '804 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the '804 Patent since at least October 9, 2018. The Accused IVR Platform is a material part of the system in at least Claim 1 of the '804 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.
- 140. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '804 Patent.
- 141. As detailed above, Omilia has continued its infringement despite having knowledge of the '804 Patent and Nuance's infringement claims.
- 142. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 143. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT VI: INFRINGEMENT OF THE '532 PATENT UNDER 35 U.S.C. § 271

- 144. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 145. Omilia and/or its customers directly infringe one or more claims of the '532 Patent under 35 U.S.C. § 271(a), including at least Claim 1, either literally or under the doctrine of

equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.

- 146. By way of example only and not limitation, Claim 1 of the '532 Patent claims:
- 1. A method comprising:

receiving a voice utterance from a user;

determining, using at least one speech engine operating on at least one processor and a plurality of grammars that each specifies a limited set of one or more acceptable inputs in a language of a plurality of languages, a plurality of speech recognition results for the voice utterance and a plurality of confidence levels, the at least one speech engine determining each of the plurality of speech recognition results by using at least one of the plurality of grammars and matching the voice utterance to the limited set of acceptable inputs identified by the at least one grammar of the plurality of grammars, each confidence level of the plurality of confidence levels corresponding to a respective speech recognition result of the plurality of speech recognition results and each of the plurality of speech recognition results corresponding to a respective language of the plurality of languages, wherein each of the plurality of confidence levels determined using the at least one speech engine indicates a confidence of the at least one speech engine that the voice utterance matches a matched input of the limited set of acceptable inputs identified by the at least one grammar used to determine the speech recognition result;

evaluating the plurality of confidence levels for the plurality of speech recognition results to determine a speech recognition result of the plurality of speech recognition results having a highest confidence level of the plurality of confidence levels determined by the at least one speech engine; and

selecting one of the plurality of languages for use in subsequently interacting with the user by selecting a language corresponding to the speech recognition result having the highest confidence level of the plurality of confidence levels determined by the at least one speech engine.

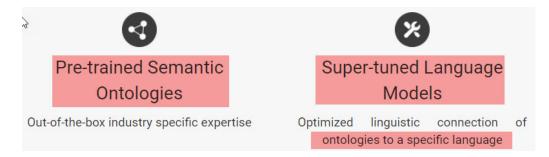
147. The Accused IVR Platform meets each element in at least Claim 1 of the '532 Patent. For example, Omilia and/or its customers utilizing the Accused IVR Platform perform a method for speech recognition with multiple language models based on a plurality of grammars or ontologies that each specifies a limited set of one or more acceptable inputs for the language. Omilia states that the Accused IVR Platform is capable of recognizing speech in multiple

languages based on pre-built concepts, dictionaries, rules, and intents for different dialects and accents:



Xpert® Packages

Omilia provides pre-packaged applications for specific verticals and languages. The DiaManT® Xpert® Packages come with a fully pre-loaded intelligent Virtual Agent providing out-of-the-box recognition and understanding of all key domain concepts. Xpert® packages come with pre-built Concept Annotation Dictionaries, Rules, and Intents for your business.



deepASR® Languages

Today, our engine excels in recognizing 17 languages including English (US, Canada, UK, & South Africa), Spanish, Russian, Polish, Kazakh, Ukrainian and Greek.

Thanks to Omilia's proprietary method of training and tuning, deepASR® is able to achieve Word Error Rates of less than half of legacy incumbent providers.

For all primary languages Omilia offers adapted acoustic and language models that cover the accent and dialectic variations within the country.

Why deepASR® succeeds where others fail?

Your customers do not speak one single language — in reality your customers have a very wide range of accents and ways of expressing themselves. In todays globalized economy there is no "one size fits all" for any language model. In the past strong accents, slang and ethnic vocabulary make companies nervous about new speech technologies. This reservation towards speech technologies stems from over-promised and under-delivered solutions from our competitors, that just didn't quite work outside their lab.

- 148. The Accused IVR Platform assigns a plurality of confidence levels to a plurality of speech recognition results. Upon information and belief, at least because it recognizes 17 languages, covers accent and dialectic variations within a country, and provides for speech recognition for customers that do not speak a single language, the Accused IVR Platform is configured to recognize and assign confidence levels to speech recognition results within a voice utterance.
- 149. The Accused IVR Platform is configured for "evaluating the plurality of confidence levels for the plurality of speech recognition results to determine a speech recognition result of the plurality of speech recognition results having a highest confidence level of the plurality of confidence levels determined by the at least one speech engine." Upon information and belief, at least because the Accused IVR Platform is configured to assign confidence levels to multiple speech recognition results, and because it is ultimately capable of recognizing speech in multiple different languages, the Accused IVR Platform is configured to evaluate the confidence levels and determine which is the highest.
- 150. The Accused IVR Platform is configured to select "one of the plurality of languages for use in subsequently interacting with the user by selecting a language corresponding to the speech recognition result having the highest confidence level of the plurality of confidence levels determined by the at least one speech engine." Omilia states that the Accused IVR Platform uses a "personalized approach to speech recognition" that is capable of storing memory and completing end-to-end interactions with a user:

In many cases the sound quality reaching the call center can be very poor due to many reasons — because most recognition engines are trained in a laboratory to understand perfect quality sound, they inevitably fail in the real world where sound quality is usually sub-par. Omilia has solved this problem by training our recognition models with real world call center audio to optimize the language and acoustic models of our ASR engine. With this personalized approach to speech recognition

Omilia reached unprecedented accuracy in speech to text transcription.



DiaManT® is home to Omilia's deepNLU® Engine that works to extract meaning from free, unstructured language. The deepNLU® Engine makes it possible to understand customer requests and intents with human-like accuracy. Because the engine is context aware and retains memory, it is capable of running entire end-to-end conversations with customers.





- 151. Upon information and belief, at least because the Accused IVR Platform retains memory and determines context and meaning for completing end-to-end interactions with a user based on prior utterances, the Accused IVR Platform is configured to choose a language based on the highest confidence level of an utterance and using that language for subsequent interactions with the user.
- 152. Omilia also induces the infringement of the '532 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows infringes the '532 Patent and by encouraging

Patent. Omilia has had knowledge of the '532 Patent since at least the filing of this Complaint. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States. See ¶ 79.

- 153. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers in the United States. $See \ \P \ 80$.
- 154. Omilia also contributes to the infringement of the '532 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the '532 Patent at least as of filing of this Complaint. The Accused IVR Platform is a material part of the system in at least Claim 1 of the '532 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.
- 155. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '532 Patent.
- 156. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 157. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT VII: INFRINGEMENT OF THE '688 PATENT UNDER 35 U.S.C. § 271

158. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.

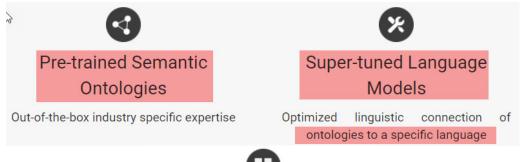
- 159. Omilia and/or its customers directly infringe one or more claims of the '688 Patent under 35 U.S.C. § 271(a), including at least Claim 1, either literally or under the doctrine of equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.
 - 160. By way of example only and not limitation, Claim 1 of the '688 Patent claims:
 - 1. A method for selecting context-dependent units for speech recognition comprising:

accepting a representation of the first word from a first language in terms of subword units from a first set of subword units that is associated with the first language, including accepting a first subword unit of the first word which is adjacent to the second word from a second language according to a speech recognition grammar;

determining a common set of features that characterize subword units in both the first set of subword units and in a second set of subword units that is associated with the second language; and

selecting one or more first context-dependent units corresponding to the first subword unit according to features in the common set of features of a second subword unit of the second word which is adjacent to the first word according to the grammar.

161. The Accused IVR Platform meets each element in at least Claim 1 of the '688 Patent. For example, Omilia and/or its customers utilizing the Accused IVR Platform perform a method for "selecting context-dependent units for speech recognition comprising accepting a representation of the first word from a first language in terms of subword units from a first set of subword units that is associated with the first language, including accepting a first subword unit of the first word which is adjacent to the second word from a second language according to a speech recognition grammar." Omilia states that the Accused IVR Platform recognizes speech from multiple languages based on the context and ontologies associated with such languages:





Xpert® Packages

Omilia provides pre-packaged applications for specific verticals and languages. The DiaManT® Xpert® Packages come with a fully pre-loaded intelligent Virtual Agent providing out-of-the-box recognition and understanding of all key domain concepts. Xpert® packages come with pre-built Concept Annotation Dictionaries, Rules, and Intents for your business.

deepASR® Languages

Today, our engine excels in recognizing 17 languages including English (US, Canada, UK, & South Africa), Spanish, Russian, Polish, Kazakh, Ukrainian and Greek.

Thanks to Omilia's proprietary method of training and tuning, deepASR® is able to achieve Word Error Rates of less than half of legacy incumbent providers.

For all primary languages Omilia offers adapted acoustic and language models that cover the accent and dialectic variations within the country.

162. Omilia further states that the Accused IVR Platform is configured to use a personalized approach to speech recognition for customers that speak multiple languages:

Why deepASR® succeeds where others fail?

Your customers do not speak one single language — in reality your customers have a very wide range of accents and ways of expressing themselves. In todays globalized economy there is no "one size fits all" for any language model. In the past strong accents, slang and ethnic vocabulary make companies nervous about new speech technologies. This reservation towards speech technologies stems from over-promised and under-delivered solutions from our competitors, that just didn't quite work outside their lab.

In many cases the sound quality reaching the call center can be very poor due to many reasons — because most recognition engines are trained in a laboratory to understand perfect quality sound, they inevitably fail in the real world where sound quality is usually sub-par. Omilia has solved this problem by training our recognition models with real world call center audio to optimize the language and acoustic models of our ASR engine. With this personalized approach to speech recognition

Omilia reached unprecedented accuracy in speech to text transcription.

163. This specifically includes speech recognition for users that are speaking in slang or mixed languages:

This is why we specifically designed and developed our deepASR® technology to perform Natural Language Recognition with custom training on the exact sound quality and language (incl. slang & mixed languages) spoken by the actual customers reaching each particular enterprise's call center. deepASR® achieves unprecedented accuracy in language recognition at near zero error margins. Now you can have the confidence that your customers will have a fantastic experience every time they call!

- 164. Upon information and belief, at least because the Accused IVR Platform recognizes speech from a user that is using mixed languages and/or slang, it is capable or accepting a representation from a first word from a first language adjacent to a second word from a second language.
- 165. The Accused IVR Platform determines "a common set of features that characterize subword units in both the first set of subword units and in a second set of subword units that is associated with the second language." Upon information and belief, at least because the Accused IVR Platform recognizes speech from an utterance that contains multiple languages, it determines common features that characterize subword units from a first language and subword units from a second language.
- 166. The Accused IVR Platform selects "one or more first context-dependent units corresponding to the first subword unit according to features in the common set of features of a second subword unit of the second word which is adjacent to the first word according to the grammar." Omilia states that the Accused IVR Platform is context aware:

deepNLU®

Omilia's deepNLU* Engine makes it possible to understand customer requests and intents with human-like accuracy. Because the engine is context aware and retains memory, it is capable of running entire end-to-end conversations with customers.

- 167. Upon information and belief, at least because the Accused IVR Platform is capable of recognizing speech from an utterance that contains multiple languages, and because it is context aware when it interacts with a user speaking multiple languages, it selects one or more first context-dependent units corresponding to the first subword unit according to features in the common set of features of a second subword unit of the second word which is adjacent to the first word according to the grammar.
- 168. Omilia also induces the infringement of the '688 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows infringes the '688 Patent and by encouraging its customers to use the Accused IVR Platform in a manner that Omilia knows infringes the '688 Patent. Omilia has had knowledge of the '688 Patent since at least the filing of this Complaint. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States. See ¶ 79.
- 169. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers in the United States. $See \, \P \, 80$.

- 170. Omilia also contributes to the infringement of the '688 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the '688 Patent at least as of filing of this Complaint. The Accused IVR Platform is a material part of the system in at least Claim 1 of the '688 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.
- 171. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '688 Patent.
- 172. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 173. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT VIII: INFRINGEMENT OF THE '925 PATENT UNDER 35 U.S.C. § 271

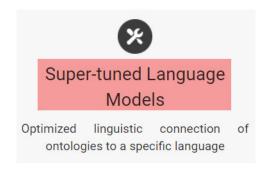
- 174. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 175. Omilia and/or its customers directly infringe one or more claims of the '925 Patent under 35 U.S.C. § 271(a), including at least Claim 27, either literally or under the doctrine of equivalents by making, using, offering to sell, selling, and/or importing the Accused IVR Platform in the United States without permission or license from Nuance.
 - 176. By way of example only and not limitation, Claim 27 of the '925 Patent claims:
 - 27. A computerized method of generating a second speech recognizer comprising the steps of:

identifying a first speech recognizer of a first domain comprising a first acoustic model with a first decision network and corresponding first phonetic contexts;

receiving domain-specific training data of a second domain; and

based on the first speech recognizer and the domain-specific training data, generating a second acoustic model of said first domain and said second domain comprising a second acoustic model with a second decision network and corresponding second phonetic contexts, wherein the first domain comprises at least a first language, wherein the second domain comprises at least a second language, and wherein the second speech recognizer is a multi-lingual speech recognizer.

Patent. For example, Omilia and/or its customers utilizing the Accused IVR Platform perform a method for "generating a second speech recognizer" by first "identifying a first speech recognizer of a first domain comprising a first acoustic model with a first decision network and corresponding first phonetic contexts." Omilia states that the Accused IVR Platform includes a speech recognizer that can recognize speech from at least one language using acoustic models and a decision network based on phonetic contexts:

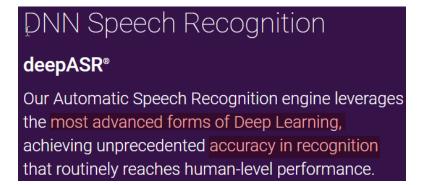


Xpert® Packages Omilia's Xpert® Packages come with a fully preloaded intelligent Virtual Agent providing out-ofthe-box recognition and understanding of all key

concepts for a specific domain and language.



178. The Accused IVR Platform receives "domain-specific training data of a second domain." Omilia states that the Accused IVR Platform employs "Deep Learning" and a "method of training and tuning" to "achieve Word Error Rates of less than half of legacy incumbent providers."



Thanks to Omilia's proprietary method of training and tuning, deepASR® is able to achieve Word Error Rates of less than half of legacy incumbent providers.

179. According to Omilia, the Accused IVR Platform recognizes at least 17 languages:

Today, our engine excels in recognizing 17 languages including English (US, Canada, UK, & South Africa), Spanish, Russian, Polish, Kazakh, Ukrainian and Greek.

180. Upon information and belief, at least because the Accused IVR Platform trains and tunes its language models based on deep learning, and because it recognizes multiple languages, it is configured to receive training data that is specific to a second domain or language.

181. The Accused IVR Platform is configured to, "based on the first speech recognizer and the domain-specific training data, generating a second acoustic model of said first domain and said second domain comprising a second acoustic model with a second decision network and corresponding second phonetic contexts, wherein the first domain comprises at least a first language, wherein the second domain comprises at least a second language, and wherein the second speech recognizer is a multi-lingual speech recognizer." Omilia states that the Accused IVR Platform recognizes speech from multiple languages using "adapted acoustic and language models," including variations in domains such as slangs, accents, and dialects:

This is why we specifically designed and developed our deepASR® technology to perform Natural Language Recognition with custom training on the exact sound quality and language (incl. slang & mixed languages) spoken by the actual customers reaching each particular enterprise's call center. deepASR® achieves unprecedented accuracy in language recognition at near zero error margins. Now you can have the confidence that your customers will have a fantastic experience every time they call!

deepASR® Languages

Today, our engine excels in recognizing 17 languages including English (US, Canada, UK, & South Africa), Spanish, Russian, Polish, Kazakh, Ukrainian and Greek.

Thanks to Omilia's proprietary method of training and tuning, deepASR® is able to achieve Word Error Rates of less than half of legacy incumbent providers.

For all primary languages Omilia offers adapted acoustic and language models that cover the accent and dialectic variations within the country.

182. Upon information and belief, at least because the Accused IVR Platform recognizes speech in multiple languages, and because the multi-language models are adapted based on tuning and training, the Accused IVR Platform is configured to generate a second speech recognizer with a second acoustic model and second decision network and corresponding second phonetic contexts based on training data from at least two languages.

- 183. Omilia also induces the infringement of the '925 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(b), both by configuring the Accused IVR Platform to operate in a manner that Omilia knows infringes the '925 Patent and by encouraging its customers to use the Accused IVR Platform in a manner that Omilia knows infringes the '925 Patent. Omilia has had knowledge of the '925 Patent since at least the filing of this Complaint. According to Omilia's website, through its "Certified Partner Program," Omilia has worked with Concentrix Corporation/Convergys, Speech-Soft Solutions, LLC, and NICE inContact to make, use, offer to sell, or sell the Accused IVR Platform in the United States. See ¶ 79.
- 184. Omilia has also sold or offered to sell the Accused IVR Platform in an infringing configuration to its customers in the United States. See ¶ 80.
- 185. Omilia also contributes to the infringement of the '925 Patent by its customers in the United States as discussed above under 35 U.S.C. § 271(c). Omilia has had knowledge of the '925 Patent at least as of filing of this Complaint. The Accused IVR Platform is a material part of the system in at least Claim 1 of the '925 Patent, has no substantial non-infringing uses, is not a staple article of commerce, and is specifically made and adapted for use in an infringing manner, as discussed above.
- 186. Upon information and belief, Omilia has made and is continuing to make unlawful gains and profits from its infringement of the '925 Patent.
- 187. Omilia's infringement has caused and will continue to cause irreparable harm to Nuance unless Omilia's infringing activities are preliminarily and permanently enjoined by this Court.
- 188. Omilia's infringement has also caused monetary damages to Nuance in an amount to be determined at trial.

COUNT IX: COPYRIGHT INFRINGEMENT UNDER 17 U.S.C. § 101

- 189. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 190. As previously alleged herein, Nuance is the owner of the Copyrights in the Software.
 - 191. The 2011 Partnership Agreement terminated on January 31, 2014.
- 192. Omilia's downloading of the Software after that date was without consent, authorization, approval or license.
- 193. On information and belief, by downloading the Software after January 31, 2014, Omilia has knowingly, willfully and unlawfully copied the Software or portions thereof. Such acts infringe the Copyrights.
- 194. Nuance discovered Omilia's Copyright infringement after the filing of the Canadian Complaint on March 6, 2020 and other communications by Omilia around the same time. The Omilia statements made during that period triggered the investigation that led to this discovery. Prior to March 6, 2020, Nuance was not in possession of information fairly suggesting a reason to investigate whether Omilia had wrongfully downloaded the Software following the termination of the 2011 Partnership and infringed its Copyrights.
- 195. Separately, on information and belief, since downloading the Software, Omilia has knowingly, willfully and unlawfully used, copied, prepared, published, sold, and/or distributed the Software, portions thereof, and/or derivative works without consent, authorization, approval or license, on information and belief, and continues to do so. Such acts infringe the Copyrights.
- 196. While Nuance has long suspected that Omilia took advantage of its role as a Nuance reseller and short-cut its ASR development process and was aware Omilia had access to its

language models for Ukranian, Greek, Romanian, and Russian in its role as a reseller of Nuance ASR technology, until recently it was unsure of how Omilia had done so or whether any violation of its Copyrights occurred in the United States.

- 197. Prior to March 6, 2020, Nuance was not in possession of information fairly suggesting a reason to investigate whether Omilia had access to languages included in the Software other than Ukranian, Greek, Romanian, and Russian.
- 198. Prior to March 6, 2020, Nuance was not in possession of information fairly suggesting a reason to investigate whether Omilia wrongfully used the Software following the termination of the 2011 Partnership and infringed its Copyrights.
- 199. On information and belief, Omilia has also induced or contributed to the infringement of the Copyrights by others by sublicensing and/or distributing the Software to others, including Omilia's customers, without Nuance's authorization.
- 200. Such conduct constitutes copyright infringement, in violation of Sections 106 and 501 of the Copyright Act, 17 U.S.C. §§ 106 and 501.
- 201. On information and belief, Omilia's infringement has been willful and intentional, without justification and in purposeful disregard of the Copyrights.
- 202. Omilia's infringement of the Copyrights has proximately caused Nuance actual damages (including Omilia's profits attributable to its infringement) under 17 U.S.C. § 504.
- 203. To the extent any additional acts of infringement have occurred since the registration of the Software, Nuance is also entitled to statutory damages pursuant to 17 U.S.C. § 504 and an award of its costs, including reasonable attorneys' fees, incurred in connection with this matter pursuant to 17 U.S.C. § 505.

204. Omilia's infringement of the Copyrights is continuing, and, unless it is enjoined by this Court, Nuance will continue to sustain immediate, irreparable and substantial injury, for which there is no adequate remedy at law. Accordingly, Nuance is further entitled to preliminary and permanent injunctive relief restraining and enjoining Omilia from continued infringement of the Copyrights.

COUNT X: VIOLATION OF THE DIGITAL MILLENNIUM COPYRIGHT ACT UNDER 17 U.S.C. § 1201

- 205. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 206. Under the terms of the 2011 Partner Agreement and any amendments thereto, Omilia received at least one username and password with which Omilia could access Nuance's Software and other software products and files via the internet.
- 207. These software products and files were embodied on Nuance's Servers where they were they were sufficiently permanent to permit them to be accessed by Omilia. Nuance's Servers are located in Massachusetts.
- 208. Without a username and password, Omilia would not have been able to access those software products and files.
- 209. On information and belief, Omilia used at least one username and password to access software products and files in a manner contrary to the terms of the Nuance Agreement.
- 210. Even after termination of the Nuance Agreement, Omilia accessed the Nuance Software.
- 211. By using the username and password in a manner without the authority of Nuance, Omilia circumvented a technological measure that effectively controls access to a work protected under the Title 17 and thus violated 17 U.S.C. § 1201(a).

- 212. Nuance discovered Omilia's actions in violation of 17 U.S.C. § 1201(a) after the filing of the Canadian Complaint on March 6, 2020 and communications with Omilia around that time.
- 213. As a result of Omilia's conduct, Nuance has suffered losses in an amount to be determined at trial, entitling it to recover damages under 17 U.S.C. § 1203(c).
- 214. Omilia's use of the wrongfully accessed Software is continuing, and, unless it is enjoined by this Court, Nuance will continue to sustain immediate, irreparable and substantial injury, for which there is no adequate remedy at law. Accordingly, Nuance is further entitled to preliminary and permanent injunctive relief pursuant to 17 U.S.C. § 1203(b).

COUNT XI: VIOLATION OF THE COMPUTER FRAUD AND ABUSE ACT UNDER 18 U.S.C. § 1030

- 215. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 216. Nuance's Software resides, among other places, on its computers and computer network (including computers, servers, and in cloud-based storage) (referred to collectively herein as "Nuance's Servers"). Such computers, servers, and cloud storage are located in Massachusetts, are used in or affect interstate commerce and communication, and are, therefore, protected computers within the meaning of 18 U.S.C. § 1030(e)(2).
- 217. By downloading the Software after January 31, 2014, Omilia has engaged in conduct that was without authorization and/or exceeded its authorized access to Nuance's protected computers.
- 218. Omilia's actions were improper and unrelated to any legitimate business purpose of Nuance. Omilia's unauthorized access and/or access that exceeded authorization was done with the intent to defraud Nuance in order to obtain and use Nuance's Software for purposes of

developing Omilia's own ASR technology and/or providing services to Omilia's customers without Nuance's authorization or providing proper compensation to Nuance.

- 219. Omilia thereby obtained something of value exceeding \$5,000 in a single calendar year, and the value to Nuance of the lost and misappropriated information exceeds \$5,000 in a single calendar year.
 - 220. Through these actions, Omilia has violated 18 U.S.C. §§ 1030(a)(2) and (a)(4).
- 221. Nuance discovered Omilia's actions in violation of 18 U.S.C. §§ 1030(a)(2) and (a)(4) after the filing of the Canadian Complaint on March 6, 2020 and communications with Omilia around that time.
- 222. As a result of Omilia's conduct, Nuance has suffered losses in an amount to be determined at trial, entitling it to recover damages under 18 U.S.C. § 1030(g).
- 223. Omilia's use of the wrongfully obtained Software is continuing, and, unless it is enjoined by this Court, Nuance will continue to sustain immediate, irreparable and substantial injury, for which there is no adequate remedy at law. Accordingly, Nuance is further entitled to preliminary and permanent injunctive relief pursuant to 18 U.S.C. § 1030(g).

COUNT XII: CONVERSION

- 224. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 225. As previously alleged herein, Nuance owns all right, title, and interest in and to the Software that is and/or was stored on Nuance's Servers.
- 226. Omilia, without authorization from Nuance, intentionally interfered with Nuance's ownership rights in the Software by: (1) downloading copies of the Software containing Nuance's proprietary and confidential information from the Nuance Servers; and (2) using the Software to

develop Omilia's own ASR technology and/or to provide services to Omilia's customers without Nuance's authorization or providing proper compensation to Nuance.

- Nuance's proprietary and confidential information from the Nuance Servers after the filing of the Canadian Complaint on March 6, 2020 and other communications by Omilia around the same time. The Omilia statements made during that period triggered the investigation that led to this discovery. Prior to March 6, 2020, Omilia did not discover, and should not by an exercise of reasonable diligence and intelligence have discovered, that Omilia had wrongfully downloaded the Software following the termination of the 2011 Partner and intentionally interfered with Nuance's ownership rights in the Software.
- 228. Separately, on information and belief, since downloading the Software, Omilia has used the Software to develop Omilia's own ASR technology and/or to provide services to Omilia's customers without Nuance's authorization or providing proper compensation to Nuance.
- 229. While Nuance has long suspected that Omilia took advantage of its role as a Nuance reseller and short-cut its ASR development process and was aware Omilia had access to its language models for Ukranian, Greek, Romanian, and Russian in its role as a reseller of Nuance ASR technology, until recently it had been unable to determine how Omilia had done so or to identify whether any violation of its rights occurred in the United States.
- 230. Prior to March 6, 2020, Nuance did not discover, and through an exercise of reasonable diligence and intelligence should not have discovered, that Omilia had access to languages included in the Software other than Ukranian, Greek, Romanian, and Russian.
- 231. Prior to March 6, 2020, did not discover, and through an exercise of reasonable diligence and intelligence should not have discovered, that Omilia wrongfully used the Software

to develop Omilia's own ASR technology and/or to provide services to Omilia's customers without Nuance's authorization or providing proper compensation to Nuance.

- 232. Omilia's actions operated to exclude Nuance from and to dispossess Nuance of the rights and benefits it had previously enjoyed as the sole and exclusive owner of the Software.
- 233. As a result of Omilia's misconduct, Nuance has suffered and will suffer damages in an amount to be determined at trial, entitling Nuance to damages to account for its losses and to recover Omilia's unjust enrichment.
- 234. As a result of Omilia's misconduct, Nuance has suffered and will suffer irreparable harm unless the Court preliminarily and permanently enjoins its wrongful conduct.

COUNT XIII: TRESPASS TO CHATTELS

- 235. Nuance incorporates by reference the allegations contained in the foregoing paragraphs as though fully stated herein.
- 236. As previously alleged herein, Nuance owns all right, title, and interest in and to the Software that was stored on Nuance's Servers.
- 237. Omilia, without authorization from Nuance, dispossessed Nuance of the Software and/or used or intermeddled with the Software by: (1) downloading copies of the Software containing Nuance's proprietary and confidential information from the Nuance Servers; and (2) using the Software to develop Omilia's own ASR technology and/or to provide services to Omilia's customers without Nuance's authorization or providing proper compensation to Nuance.
- 238. Nuance discovered that Omilia downloaded copies of the Software containing Nuance's proprietary and confidential information from the Nuance Servers after the filing of the Canadian Complaint on March 6, 2020 and other communications by Omilia around the same time. The Omilia statements made during that period triggered the investigation that led to this

discovery. Prior to March 6, 2020, Omilia did not discover, and should not by an exercise of reasonable diligence and intelligence have discovered, that Omilia had wrongfully downloaded the Software following the termination of the 2011 Partner and dispossessed Nuance of the Software.

- 239. Separately, on information and belief, since downloading the Software, Omilia has used the Software to develop Omilia's own ASR technology and/or to provide services to Omilia's customers without Nuance's authorization or providing proper compensation to Nuance.
- 240. While Nuance has long suspected that Omilia took advantage of its role as a Nuance reseller and short-cut its ASR development process and was aware Omilia had access to its language models for Ukranian, Greek, Romanian, and Russian in its role as a reseller of Nuance ASR technology, until recently it had been unable to determine how Omilia had done so or to identify whether any violation of its rights occurred in the United States.
- 241. Prior to March 6, 2020, Nuance did not discover, and through an exercise of reasonable diligence and intelligence should not have discovered, that Omilia had access to languages included in the Software other than Ukranian, Greek, Romanian, and Russian.
- 242. Prior to March 6, 2020, did not discover, and through an exercise of reasonable diligence and intelligence should not have discovered, that Omilia wrongfully used the Software to develop Omilia's own ASR technology and/or to provide services to Omilia's customers without Nuance's authorization or providing proper compensation to Nuance.
- 243. As a result of Omilia's misconduct, Nuance has suffered and will suffer damages in an amount to be determined at trial, entitling Nuance to damages to account for its losses and to recover Omilia's unjust enrichment.

244. As a result of Omilia's misconduct, Nuance has suffered and will suffer irreparable harm unless the Court preliminarily and permanently enjoins its wrongful conduct.

JURY DEMAND

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Nuance respectfully requests a trial by jury of any issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Nuance respectfully requests that:

- A. Omilia be adjudged by this Court to have directly, indirectly, and/or contributorily infringed one or more claims of each of the Asserted Patents under 35 U.S.C. § 271;
- B. Omilia be adjudged by this Court to have willfully infringed one or more claims of each of the Asserted Patents from the time Omilia became aware of the infringing nature of its conduct, and that Nuance be awarded treble damages for the period of such willful infringement pursuant to 35 U.S.C. § 284;
- C. The Court find the Asserted Patents valid and enforceable;
- D. Omilia be ordered by this Court to account for and pay Nuance damages adequate to compensate Nuance for the infringement of one or more claims of the Asserted Patents, pursuant to 35 U.S.C. § 284;
- E. This Court enter a preliminary and permanent injunction pursuant to 35 U.S.C. § 283 preventing continuing infringement of one or more claims of each of the Asserted Patents;
- F. This case be deemed exceptional and Nuance be awarded interests, costs, expenses, and reasonable attorneys' fees for this suit as provided by 35 U.S.C. § 285;

- G. Find that Omilia intentionally and willfully infringed Nuance's Copyrights in the Software pursuant to 17 U.S.C. §§ 106 and 501;
- H. Award Nuance damages for Omilia's infringement of Nuance's Copyrights pursuant to 17 U.S.C. § 504.
- I. Award Nuance full costs and reasonable attorneys' fees for this suit as provided by 17
 U.S.C. § 505;
- J. This Court find that Omilia violated the DMCA;
- K. This Court enter a preliminary and permanent injunction pursuant to 17 U.S.C. § 1203(b) preventing continuing harm to Nuance caused by Omilia violation of the DMCA pursuant to 17 U.S.C. § 1203(c)(1);
- L. This Court order the impounding while this action is pending, on such terms as it deems reasonable, of any device or product that is in the custody or control of Omilia developed through the violation of the DMCA, pursuant to 17 U.S.C. § 1203(c)(2);
- M. This Court order that Omilia pay Nuance damages adequate to compensate Nuance for the violation of the DMCA, pursuant to 17 U.S.C. § 1203(c)(3);
- N. This Court order that Nuance be awarded costs, expenses, and reasonable attorneys' fees for this suit, pursuant to 17 U.S.C. § 1203(c)(4)-(5);
- O. This Court as part of a final judgment order the remedial modification or the destruction of any device or product involved in the violation of 17 U.S.C. § 1201(a);
- P. This Court find that Omilia intentionally and willfully violated the CFAA;
- Q. This Court find that Omilia committed the tort of conversion;
- R. This Court find that Omilia committed the act of trespass to chattels;

- S. This Court grant expedited discovery, including a forensic analysis of Omilia's DiaManT platform, including computer networks and systems and cloud-based servers, which may contain Nuance's proprietary and confidential information or works derived therefrom;
- T. Nuance be awarded Nuance monetary damages in an amount to be determined at trial, including exemplary and punitive damages;
- U. Nuance be awarded Nuance restitution for Omilia's ill-gotten profits and unjust enrichment;
- V. Nuance be awarded its reasonable costs and attorneys' fees incurred in obtaining any and all relief in this action; and
- W. Nuance be awarded such other and further relief as this Court may deem just and proper.

Dated: June 8, 2020 Respectfully submitted,

By: /s/ Christian E. Mammen

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Counsel for Plaintiff and Counterclaim Defendant Nuance Communications, Inc.

CERTIFICATE OF SERVICE

I hereby certify that this document filed through the ECF system will be sent electronically to the registered participants as identified on the Notice of Electronic Filing (NEF) and paper

copies will be sent to those indicated as non-registered participants on June 8, 2020.

/s/ Christian E. Mammen
Christian E. Mammen

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