Provide clinicians the freedom to dictate clinical documentation on-the-go by using smartphones as wireless microphones with Ultrabook™ devices

**Executive Summary**

With today’s focus on electronic health records, busy clinicians need a better approach to dictation. Traditional dictation solutions, such as dedicated dictation stations and laptops with hard-wired microphones, are no longer sufficient. Clinicians cannot afford to waste time waiting for an available station—which may also hamper accuracy due to the delay between a patient visit and dictation. Using wireless mobile dictation allows clinicians to spend more time with their patients.

The Nuance PowerMic® Mobile solution, combined with the Nuance Cloud and Dragon® Medical speech recognition software, untethers the clinician from a dedicated dictation station and cumbersome microphone wires. With this next-generation dictation mobility solution, the clinician’s smartphone acts as the microphone. The solution is used with the clinician’s Windows*-based mobile computing device, such as an Intel® architecture-based laptop or an Ultrabook™ 2-in-1 device, or a workstation. Clinicians no longer need to find an available dedicated dictation station. This solution empowers physicians and nurses to complete clinical dictation as they meet with each patient, walk down the hall, or whenever and wherever it is convenient for them.

**Wireless Mobile Solutions with Technology Powered by Intel**

- Turns Android- and iOS-based phones into more secure wireless microphones to dictate using the Dragon® Medical software
- Provides full virtual environment support including VDI and virtual app configurations
- Wireless docking with WiGig enables wireless connections with mouse, printer, and other peripherals

**Authors**

- Andrew Bartley
  Solution Architect, Intel
- Peter Decoulos
  Healthcare Strategic Relationship Manager, Intel
- Mathew Taylor
  Distributed Healthcare Segment Lead, Intel

**Figure 1.** Together, Nuance PowerMic® Mobile and Dragon® Medical software work with Android*- and iOS*-based phones to transform them into speech recognition capture devices for Intel® architecture-based laptops and 2-in-1s.
Business Challenge: Medical Dictation Lacks Mobility

Modern medicine challenges health workers to use mobile technology to streamline their workflows, yet medical dictation still ties clinicians to wired solutions. Speech recognition for clinicians has been in existence for some time, and Nuance is a leader in this area with Nuance PowerMic® and Nuance Dragon® Medical software. But traditionally, health organizations or clinicians themselves needed to purchase wired microphones and attach them to dedicated workstations or to a laptop. On a typical day, physicians had to interrupt their hospital rounds or patient visits to find an available dictation workstation. With a limited number of dictation stations, physicians often had to wait for an empty station, resulting in lost time and dictating potentially less detailed patient information. Even when the microphone was attached to a personal laptop, the physician’s mobility was limited. As shown in Figure 2, clinicians needed a way to free themselves from the wires to increase efficiency and to interact with patients more naturally.

Supporting Clinical Mobility with Nuance PowerMic Mobile

Various medical institutions are testing or have implemented the PowerMic Mobile and Dragon Medical solution. A major healthcare provider was using the Nuance PowerMic on dedicated dictation workstations but found the system was wasting both IT staff and clinician time. Clinicians frequently had to wait for an available dictation station, and if there were technical issues, such as a disconnected microphone, IT staff often needed to resolve the issue. To address these problems, the provider tested the Nuance PowerMic Mobile solution and found that it streamlined dictation.¹

Nuance Healthcare Solutions

Nuance is redefining how clinicians interact with clinical documentation on every level. When clinicians have a more natural way to capture and communicate the patient story, they have more time to focus on what matters most. Nuance medical dictation products—including Nuance Dragon® Medical One and Nuance PowerMic® Mobile—improve patient care with complete, compliant, and cost-effective clinical documentation.

Solution Value: Mobile Medical Dictation Enhances Clinical Records

With PowerMic Mobile, Nuance Dragon Medical One software, and Intel® architecture-based technology, clinicians can use their smartphones to dictate, edit, and navigate the electronic health record (EHR) system simply by speaking into their smartphone. PowerMic Mobile automatically pairs with the installed EHR system so that clinicians can do patient medical dictation using Dragon Medical software from virtually anywhere. As a result, physicians can spend more time with patients, capture patient notes while information is fresh, or catch up on clinical dictation from their home or office. This provides greater flexibility to fit caregivers’ schedules while greatly extending the options for clinical documentation.

The Nuance PowerMic Mobile solution offers the following benefits:

• **Scalable and centrally managed.** Add more access as needed, and manage through web-based controls for configuring user accounts and preferences.

• **Stays connected in a virtualized world.** Works with Microsoft Windows*-based systems, including desktops, thin clients, laptops, and Ultrabook™ devices and 2-in-1 devices. It provides vendor-agnostic support for virtualized (cloud-based) electronic health records. PowerMic Mobile offers greater clinician mobility throughout the hospital, in clinics, at the office, and at home.

• **Automatic workstation pairing.** Pairs mobile devices with target applications, using Windows Login ID, Nuance Application Username, or token-based sharing.

• **User programmable buttons.** Programmable on-screen buttons control audio capture, navigate templates, and effortlessly move through clinical documents for review and editing.

• **Compatible with Android*- and iOS*-based phones.** Application distribution through the App Store and Google Play* Store significantly simplifies end-user rollout in an organization.

• **Optimized for Nuance solutions.** Designed to work with any Windows-based PC or tablet, PowerMic Mobile has been fully tested and optimized for use with Dragon Medical One and Dragon Medical Network edition, and other Nuance healthcare solutions.

Figure 2. The traditional dictation workstation with a wired microphone meant clinicians were tethered to the station. Mobile technology can untether medical dictation and streamline the patient dictation process.
Solution Architecture: Mobile Medical Speech Recognition

The Nuance PowerMic Mobile and Dragon Medical solutions connect to Intel® Xeon® processor-based servers in the Nuance Cloud through either a local network or through Wi-Fi* or cellular connections. Dragon Medical One is designed to take advantage of features in Microsoft Windows® 10 and advanced Intel architecture-based 2-in-1 devices, Ultrabook devices, and tablets—business-class devices that deliver the necessary security, remote manageability, and performance that mobile medical workers need.

The Nuance PowerMic and Dragon Medical solutions (see Figure 3), use Intel® technology to turn iOS- and Android-based smartphones into more secure microphones for medical dictation. Healthcare organizations subscribe to PowerMic Mobile and their clinicians simply download the iOS or Android application, enter a username and password, and begin dictating. The smartphone’s microphone captures the audio and inputs it, through the Nuance Cloud, directly into the Dragon Medical speech recognition application on the 2-in-1 device, tablet, or Ultrabook device. PowerMic Mobile presents the users with customizable buttons on the phone's screen that mimic commands used in hard-wired dictations (such as dictate, rewind, or tab forward).

Clinicians can also experience “no wires” advantages using PowerMic Mobile along with devices equipped with the latest Intel® Core™ processors with features such as solid-state drives, WiGig, and Miracast*. WiGig enables the system to wirelessly recognize nearby peripherals such as a keyboard, mouse, monitor, or printer. The Miracast wireless display aids in collaboration—it is used to replicate a screen on an Ultrabook device to any Miracast-enabled monitor to share patient data with other healthcare team members, caregivers, and patients.

Figure 3. The Nuance PowerMic Mobile solution lets clinicians dictate into a smartphone. Information is sent through the cloud to an Windows*-based mobile computing device with Intel® Inside®, such as a laptop or an Ultrabook™ 2-in-1 device, or a workstation paired with Nuance Dragon* Medical software.

Better Together: Ultrabook™ Devices and Intel® Wireless Technology

Ultrabook™ is the name trademarked by Intel to describe a category of thin and light mobile computers that function as both a laptop and a tablet. These devices have a high level of responsiveness, longer battery life, and are built on Intel's newest platform security technologies. Ultrabooks using the newest Intel® Core™ processors also support the latest WiGig and Miracast “no wires” technology.

Intel's latest technology provides these benefits:

• **Performance.** Intel® Solid State Drives provide responsive performance, long battery life, great reliability, and flexibility and scalability of storage. Higher-end Intel® processors support compute- and graphics-intensive operations.

• **Manageability.** Intel® vPro™ technology and Intel® Smart Connect Technology enable flexible, reliable high-performance connectivity.

• **Virtualization.** Intel® Virtualization Technology for Directed I/O allows support for newer virtual client models.

• **Security Features.** Laptops, 2-in-1 devices, and tablets equipped with Intel® Core™ processors offer peace of mind by providing fast data encryption to keep information safe without negatively affecting device performance.

• **Wireless docking.** WiGig enables wireless docking with monitor, keyboard, mouse, and peripherals.

• **Share the screen.** Miracast technology allows images to be shared across devices to aid in collaboration.
Conclusion

A growing number of medical facilities are looking to mobile technology—small form factor devices such as tablets, Ultrabook devices, 2-in-1 devices, collaborative mobility software, and wireless capabilities—to access digital data on the go. The move to mobile technology streamlines workflows and improves real-time clinical decision support. Clinical documentation is critical for accurate EHRs, yet the traditional model uses wired microphones connected to dedicated dictation stations. Being “tethered” to a wired dictation station wastes time for clinicians and might result in less accurate clinical information being recorded.

The combination of Nuance PowerMic Mobile, Nuance Dragon Medical speech recognition software, and an Intel architecture-based mobile device untethers the clinician from a dedicated dictation station. With Nuance PowerMic Mobile, clinicians use their personal smartphone as a convenient, wireless microphone. The solution runs on Intel Xeon processor-based servers in the Nuance Cloud and on Windows-based systems such as Ultrabook 2-in-1 devices with wireless technologies like WiGig and Miracast. This solution lets clinicians dictate patient notes when and where it is convenient for them, enabling them to be as efficient and mobile as possible while spending more time with patients.

Find the solution that’s right for your organization. Contact your Intel representative or visit intel.com/healthcare.

Solutions Proven By Your Peers

Intel Solution Architects are technology experts who work with the world’s largest and most successful companies to design business solutions that solve pressing business challenges. These solutions are based on real-world experience gathered from customers who have successfully tested, piloted, and/or deployed these solutions in specific business use cases. Solution architects and technology experts for this solution brief are listed on the front cover.

Learn More

You may also find the following resources useful:

- Nuance Healthcare: nuance.com/healthcare
- “PowerMic Mobile Turns Your Smartphone into a Secure Microphone” Video: youtube.com/watch_popup?v=-8a-ZjWVj2M
- Nuance PowerMic Mobile Video: youtube.com/watch_popup?v=OjoqiePRFtI

Solution Provided By:

Nuance

Intel

1 Use cases for wired microphones using Nuance PowerMic® still exist; the key to clinic efficiency is to choose the technology most suited to the specific use case.
2 No patient data is stored in the Nuance Cloud—only voice profiles, commands, and custom macros are stored in the cloud.
3 Wi-Fi® and cellular-enabled devices may require Federal Communications Commission (FCC) authorization.

All information provided here is subject to change without notice. Contact your Intel representative to obtain the latest Intel product specifications and roadmaps.

Intel technologies’ features and benefits depend on system configuration and may require enabled hardware, software, or service activation. Performance varies depending on system configuration. No computer system can be absolutely secure. Check with your system manufacturer or retailer, or learn more at intel.com.

No license (express or implied, by estoppel or otherwise) to any intellectual property rights is granted by this document.

Copyright © 2016 Intel Corporation. All rights reserved. Intel, the Intel logo, Intel Core, Intel Inside, Intel vPro, Ultrabook, and Xeon are trademarks of Intel Corporation in the U.S. and/or other countries.

* Other names and brands may be claimed as the property of others.