



# SpeechMagic™

Speech recognition-based information capturing

**SpeechMagic is an information capturing platform which enables healthcare IT system providers to deliver seamlessly integrated digital dictation and speech recognition capabilities to hospitals, clinics, transcription companies and group practices.**

SpeechMagic provides speech recognition for the instantaneous capturing of information - ensuring that clinicians generate and receive accurate medical reports and patient information, when and where needed.

A seamless flow of information contributes to raise the quality of service and treatment outcome; it is essential for managing the healthcare enterprise efficiently, while raising individual productivity and freeing up resources for patient treatment and care.

Because we understand how much your work and patient safety depend on accurate information, we always strive to find ways to facilitate every type of reporting use case.

Using the SpeechMagic professional speech recognition technology enables end users to create reports more efficiently.

SpeechMagic increases the productivity of medical transcription, which results in reduced backlogs and faster turnaround time. Accurate information is available on time, making it possible for doctors to increase quality of care.

## Proven

Global network of more than 100 integration partners deployed at more than 8,000 sites in 70 nations.

## Platform

SpeechMagic is seamlessly integrated into information systems (IS) or reporting solutions, enabling the end user to efficiently capture information within their familiar working environment.

## Industrial grade

SpeechMagic captures dictated information and automatically generates formatted and structured medical information - whether for a small practice, a large hospital, or a group of hospitals.

## Flexible workflows

SpeechMagic allows the user to choose their preferred and most efficient workflow to capture medical information — switch between frontend and backend recognition when required or use both.

## Across the world

SpeechMagic supports the largest language portfolio in the industry with 25 recognition languages and provides 150 specialised recognition vocabularies (ConTexts).

## KEY BENEFITS FOR USERS

### Profitable

Speech recognition implementations are described as highly profitable IT projects, allowing an increase in productivity by speeding up turnaround time and allowing the re-allocation of the budget money saved.

### Flexible

You can change the way of working anytime. Decide whether you want to have the recognition done in the background (backend), want to see the recognised text immediately and directly edit it yourself (frontend) or, after dictating, send the dictation to a transcriptionist (deferred frontend).

### Immediate and continuous adaptation

SpeechMagic automatically and continuously adapts to the way you dictate based on your final reports.

### Medical formatting

SpeechMagic transcribes dosages, measurements, etc. into a standardised format; SpeechMagic ensures full compliance to medical standards.

### Optional Initial Training

Training of the voice user profile is not required. We recommend initial training for non-native speakers.



SpeechMagic is Citrix Ready™, allowing for all reporting use cases (digital dictation, frontend recognition, correction) to run within a Citrix infrastructure. SpeechMagic components run on fat clients as well as thin clients (Windows XP Embedded, Linux) which allows roll-out of speech technology without compromises.



## Choosing speech-based information capturing

**Eliminate turnaround time:** speech recognition is a fast and convenient method to create medical documentation and input information into electronic patient records. Reports can be validated by the author instantly - at the point of dictation.

**Increase transcription productivity:** proofreading and editing text drafts delivered by backend speech recognition is significantly faster than transcribing recorded dictations. With the introduction of SpeechMagic transcription departments experience high productivity gains and as a consequence significant reductions in costs.

**Roll-out fast:** giving doctors the choice between frontend and backend speech recognition delivers individual workflow preferences and eases change management in large-scale implementations.

**Save money:** hospital-wide speech recognition has been described as “the most profitable IT project ever”. SpeechMagic allows Vejle hospital in Denmark to treat 7% more patients; it saves Oslo University hospital 900,000 € per year.

## SpeechMagic reporting

SpeechMagic supports a variety of reporting scenarios which enable doctors to choose their preferred and most efficient document creation workflow.

**Backend speech recognition:** the user dictates directly into the computer or on a mobile dictation device. The dictation is converted into text in the background and then transmitted to an in-house or outsourced transcription service for editing.

### Frontend speech recognition with deferred

**correction:** the recognised text appears directly on the user’s screen. After finishing the dictation, the text and audio files are edited by your transcriptionist.

### Frontend speech recognition with online correction:

doctors have full control of their reports; recognition and correction overseen directly, by themselves, on their pc.

### Speech recognition in disconnected mode:

doctors can access the dictation and speech recognition system outside the central network, on a laptop or tablet pc. Upon reconnecting the device to the network, the central functions and services are performed.

## Intelligent Speech Interpretation

SpeechMagic developed Intelligent Speech Interpretation (ISI) technology and allows the understanding of natural language, thus reducing the correction effort for both the transcriptionists and the doctors who look after the reporting process themselves.

It leaves out the 'um's and 'eh's, ignores dialogue that is not part of the dictation, implements corrections that are dictated as part of the text, fills the information into forms, and even rephrases sentences.

And, not least, it formats and organises text, for example adding section headings, numbering lists and inserting standard blocks of content.

In fact, SpeechMagic emulates the capabilities of a good medical transcriptionist in order to generate usable reports with a minimum of human intervention.

## Highlights: Industrial grade speech recognition made for healthcare

**Accuracy:** over 150 recognition vocabularies (conTexts) cover a broad spectrum of medical terminology.

**Continuous learning:** words can be added to the conTexts; users' dialects and accents are considered in the individual voice profile.

**Convenience:** direct dictation into medical templates and fields – doctors can define the optimal documentation workflow for their area. Auto-texts and smart fields can be used to populate parts of the report automatically, which reduces dictation volume.

**Hands-free navigation:** controlling the reporting application by voice is becoming an increasingly important aspect of infection control.

**IT administration:** a network-based system, maintained centrally, reduces the strain on IT resources. Failover concepts ensure high availability.

## KEY BENEFITS FOR ADMINISTRATORS

### Supports multiple input devices

SpeechMagic processes sound files recorded via telephone, microphone, mobile digital devices, PDA, MCA, tablet PC, etc.

### SpeechMagic for roaming users

With SpeechMagic integrated into the hospital IT system, dictation, recognition and correction are independent of location, across a Local Area Network (LAN), Wide Area Network (WAN), the Internet, or disconnected. The system is optimised to ensure fast access and minimise network traffic.

### Scalable

With a network-based, distributed architecture, central, low-effort administration and maintenance, SpeechMagic scales up to more than 100,000 users at one site.

### Safe

SpeechMagic ensures fail safety and data integrity for reliable, robust and secure system operation.

### Central

SpeechMagic allows efficient, central system administration and supports client/server-based architecture, ensuring that authors are not restricted to one workstation. Vocabularies can be shared between authors and cost-effectively administered centrally.

### Audio compression

SpeechMagic ensures low network bandwidth requirements by offering optimal audio compression (19 kBit/s).

### Full support of multi-processor machines

SpeechMagic takes full advantage of multi-processor platforms to save data centre space for large deployments. SpeechMagic components can also be used in parallel with other resource-intensive applications.

### Intelligent job routing

SpeechMagic has the tools to decide per report whether correction or transcription is more efficient in order to maximise overall productivity.

### Management reporting

SpeechMagic calculates productivity-based performance parameters for each report to quantify your benefits and support ROI calculations.

## INDUSTRY PROVEN AND APPROVED

SpeechMagic is used in trust-wide NHS implementations in the UK, the AP-HP public hospital network in Paris, regional healthcare systems in Spain, Italy and Scandinavia, in all German university hospitals and in the world's largest healthcare speech recognition platform in the US with more than 180,000 users. SpeechMagic itself and many of the 8,000 implementation sites in 70 nations have been recognised for outperforming in healthcare efficiency, service quality and innovation.

### Technology Leadership Award



#### **Frost & Sullivan Global Speech Recognition Technology Award –**

for demonstrated leadership in the field of healthcare speech recognition technologies.



#### **Frost & Sullivan Technology Leadership Award –**

most widely used speech recognition technology in European healthcare.

### Most Innovative Speech Recognition Award



#### **Most Innovative Speech Recognition Solution Award –**

bestowed upon Borgess Medical Center in the US for saving more than \$200,000 USD in transcription costs within the first year of deployment.

### eHealth Innovation Award



The radiology department of the Diana Princess of Wales hospital in the UK reduced turnaround time by combining a PACS with speech recognition.

### Technology Idea of the Year Award



By implementing SpeechMagic, radiologists at United Surgical Partners Europe now have a guaranteed maximum report turnaround time of 15 minutes.

## SYSTEM REQUIREMENTS

### Operating system

Microsoft Windows XP Service Pack 3 or higher (32-bit and 64-bit)  
\* native 64-bit support for SpeechMagic Client, 32-bit emulation mode for other components

### Database environment

One of the following database environments Microsoft SQL Server 2000 Service Pack 3 or higher, Oracle 9i or higher

### Word processor

One of the following word processors for online recognition and correction (latest service pack is mandatory): Microsoft Word 2003 or higher, TX Text Control ActiveX 11.0 or higher, RichEdit

The SpeechMagic Edit Control Adapter API allows integration with a wide range of additional edit controls.

### Citrix

Citrix Presentation Server 4.0 and 4.5, Citrix XenApp 5.0 or higher (32-bit and 64-bit Edition)

### Windows Terminal Server

Microsoft Windows Server 2003 or higher (32-bit and 64-bit Edition)

### Virtualization

Supported.

### Recommended hardware

CPU: Intel Core or equivalent

RAM: defined requirements on top of operating system recommendation and running applications

Backend System Tasks: 2 GB

Frontend recognition: 500 MB

Digital dictation/correction: 256 MB

## About Nuance Healthcare

Nuance healthcare is a division of Nuance communications, the world's leading provider of speech and imaging solutions. Today, Nuance healthcare provides the most comprehensive family of speech-driven clinical documentation and communication solutions available anywhere. Our vision is to accelerate the adoption of Medical Information Systems, helping providers maximise the return on their technology investments.

## The SpeechMagic line: Individual speech recognition consulting

SpeechMagic is robust, scalable and perfectly adapted for fast integration into a clinical environment. Please contact us to discuss your individual situation and a potential roll-out plan at: [info.speechmagic@nuance.com](mailto:info.speechmagic@nuance.com)  
Or visit us at: [www.nuance.co.uk/speechmagic](http://www.nuance.co.uk/speechmagic)

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