

G-Cloud 15

Service Definition:

Dragon Medical One (DMO)

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- Service Definition (Draft)

Transforming patient care with Dragon Medical One.

Cloud-based clinical speech recognition for documenting care in the EPR and beyond

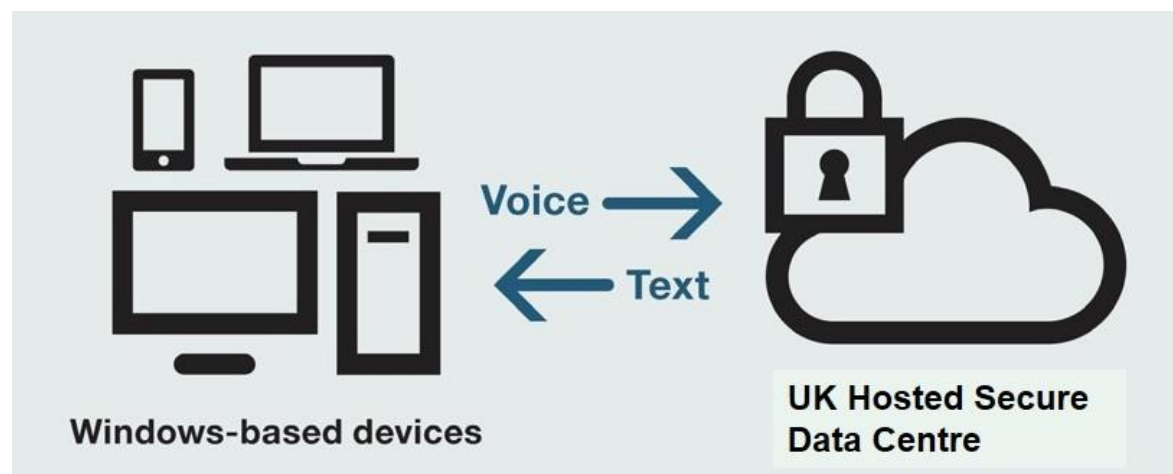
Clinicians, not technology limitations, should dictate the patient story.

With Dragon® Medical One, your staff can stay productive whether they're at the workstation or anywhere else they need to be, our clinical speech recognition provides a consistent experience at the hospital, clinic, office, home, and on the road.

The world is your workstation

Using a secure desktop app, clinicians can use their voice to securely capture the patient story more naturally, efficiently and on their terms. Dragon Medical One provides a consistent and personalised clinical documentation experience that spans solutions, platforms, devices, and physical locations.

For the organisation at large, the power of this cloud platform means access to data. These insights help monitor adoption trends, ensure user efficiency, help inform decisions, and reap the benefits of compatibility with Crescendo Systems workflow enhancements.



The Best Speech Recognition in the World— in the Cloud

- **Always available:** Dragon Medical One is designed for speed, accuracy, and flexibility with personalised vocabularies and templates that can be accessed and shared across the widest range of devices in the industry.
- **Budget-friendly:** Affordable subscription-based pricing with little up-front capital investment.
- **Easy to install and maintain:** No complex configurations, installation options that work with the infrastructure you already have, and automatic updates mean less work for your IT staff and less hassle for your clinicians.
- **No speech profile training:** Dragon Medical One requires no voice profile training and includes accent detection and automatic microphone calibration. Dragon Medical One creates profiles that continue to adapt and improve over time to ensure an optimal clinician experience from the start.
- **Limitless productivity:** Give your users the ability to speak freely and as much as they like. With Dragon Medical One, there are no per-user limits so clinicians can stay productive anywhere and focus on the unique patient story rather than usage limits.
- **Healthcare compliant:** Your speech-related data is communicated over 256-bit encryption channels using TLS protocols to ensure end-to-end security.

Dragon Medical One is all about portability, personalisation, access, insights, and compatibility.

Portability to work at any workstation with the Dragon Medical One Desktop Application.

Compatible with all leading EPRs, and designed with virtualisation in mind, the Dragon Medical One desktop app provides secure, accurate, and portable cloud-based clinical speech recognition across a wide range of Windows® devices.

Personalisation.

Dragon Medical One puts the power in the clinician's hand with the ability to personalise their experience and gain access to new features, products, and services as they emerge.

Flexibility to use your smartphone as a microphone – Nuance PowerMic Mobile.

Turn your smartphone (iOS and Android) into a secure, wireless microphone to enhance clinician productivity and convenience when working with Dragon Medical One.

Insights abound with Dragon Medical Analytics. Dragon Medical Analytics gives system administrators access to individual and site-wide usage metrics and trends so they can optimise clinician efficiency, productivity, and workflows. With Dragon Medical Analytics, organisations can maximise their investments and make more informed decisions.

Compliant HSCN certified Nuance cloud.

Dragon Medical One is based on a healthcare compliant hosting infrastructure supporting the availability, business continuity, and security demands of the NHS.

A single voice profile across platforms and devices.

A single voice profile means clinicians are up and running immediately across clinical workflows, care settings, devices, and apps. This seamless, consistent, and personalised voice experience lets clinicians easily work between desktops and other devices outside of the EPR.

Put it all together, and it's more than just a cloud platform— it's a way to redefine the clinician's relationship with technology.

BENEFITS:

Benefits at a glance

Achieve faster documentation turnaround

Your clinicians are more productive with fast, accurate, and responsive dictation

The documentation process is consistent and personalised across devices

Eliminate the need for costly transcription services or inefficient manual processes

More complete narratives lead to improved clinical decision making and quality of care.

Ready to use, requires no speech profile training, includes accent detection and automatic microphone calibration

Access to data, analytics, and insights to inform better decisions

Supports PowerMic Mobile App which turns your Smartphone into a cost-effective, high quality microphone

Key DMO features that support workflow:

USER WORKFLOW:

Step by step commands

- Allows the end user to create macros using simple building blocks to speech-enable their workflow.
- Allow end users to use step-by-step commands, no matter where they were created.
- Existing user-level user commands will be migrated automatically to step-by-step commands

Custom words (manage vocabulary)

- Allows user to build custom words on the fly
- You can improve speech recognition by explicitly tailoring the system to your requirements.
- You can add words that are not in the system; for example, industry-specific acronyms

Autotext

- Allows user to build custom Auto-Texts on the fly
- Predefined blocks of text which are frequently used in consults, progress notes, etc.
- Save time, as you do not have to say the whole text every time; instead you insert the auto-text by saying “insert” and the name of the auto-text.

Fields

- Allows user to build standard dictation blocks and templates
- Can be combined with **Auto-Texts** for maximum effect
- Can be filled with **default content, multi-select fields** (separated with pipe |) and hints
- “**Accept Defaults**” and “Field complete” commands increase productivity further

Dictation box

- Allows users to dictate into any standard Windows control
- Pops up automatically if “dictate at cursor” is not possible
- (can also be used by default, as some of our users prefer)
- Enables dictation into any Windows-standard control where one can type
- Optimised workflow: users can use auto-texts, commands, correct and finalise their dictation, and transfer with:
 - “Transfer text” command
 - PowerMic II button click (customisable)
 - Hotkey (customisable)
 - Recall text feature if something goes wrong
 - Difference to dictate @ cursor: one click/command

Full text control commands

- Select and Say
- Available for dictate@cursor as well as Dictation Box
- This will allow end users to:
 - Select text via voice
 - Navigate within the text via voice
 - Correct via voice

- Over dictation
- Selection from alternatives

Selection and correction model

- Full text control: Hands free dictation and correction
- Allows end users to select typed and dictated text via voice. Selecting text via voice will present the correction menu, providing correction functionality.
- Simple: Select <TEXT>, Select that
- Range: Select <TEXT> through <TEXT>
- Browsing: Select next, Select previous (Select again)
- Continue dictation: Go back

Scratch that

- Allow doctors to remove selected, typed or dictated text.
- After dictation: Removes the last utterance
- After typing: Removes the word to the left of the text cursor
- Selections: Removes the selection

PowerMic (hardware) support

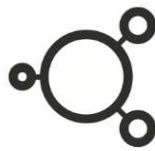
- Allows user to use PowerMic II buttons for frequently used actions
- Saves switching between dictation (device) and keyboard for frequently needed actions
- Show/Hide dictation box/Dragon bar
- Transfer text (when using dictation box)
- Anchor mode
- Field navigation
- Accept defaults...
- Press & Hold option
- Also valid for SpeechMike & keyboard hotkeys
- Also valid with virtualized deployments!

PowerMic Mobile support

- Turns iPhone and Android devices into secure wireless microphones to dictate into Dragon Medical One
- Provides full virtual environment support including VDI and virtual app configurations
- Virtualisation **vendor** and **end point agnostic**
- Can be used in conjunction with PowerMic II/III



**Greater
clinician
mobility**



**Scalable and
centrally
managed**



**Works with
virtual
environments**



**Automatic
workstation
pairing**

ADMIN WORKFLOW:

NUANCE MANAGEMENT CENTER

Please note that The Nuance Management Centre can be managed by either Crescendo Systems or the customer organisation, according to customer preference.

The Nuance Management Center provides powerful, yet easy-to-use central user administration capabilities that allow organisations to enable and manage these solutions across multiple users.

Nuance Management Center helps businesses to ensure efficient use of their licenses, meet requirements for reporting accuracy, and centrally manage their DMO deployment for significant time and cost savings.

Fully scalable central management

With Nuance Management Center, administrators can centrally manage the following at the user, site, group or enterprise-wide level:

- User accounts and profiles
- Administrative settings
- User options
- Custom commands
- Custom words

In addition, Nuance Management Center is fully scalable to support any number of licenses as your organisation grows and evolves. Because only usage data—not dictation data—is sent to the server for tracking, businesses don't have to worry about the security of dictation content.

License management

With central license management, IT administrators can manage licenses or subscriptions—at a glance—any time after Dragon deployment is complete. They can, for example, view the number of licenses used and license expiration dates, as well as grant or revoke user licenses. Central license management also helps organisations with mandated reporting workflows to easily meet strict requirements for reporting efficiency and accuracy.

Features Include:

Centralised User Profile Management	From a single management console, you can segment users into subgroups (for example, department or line of service) and assign applicable options. You can schedule batch updates of new releases and track Dragon Medical client licenses.
User Security	Optional user login and passwords support NHS Security standards and prevent accidental login under the incorrect profile. If the dictating PC remains idle too long, DMO automatically logs doctors off.
Profile Optimiser	With security login and passwords, when a clinician approaches a workstation to dictate patient records, DMO recognises his/her voice easily and quickly. A new version of the Language Model/Acoustic Model Optimizer (ACO/LMO) runs offline while doctors dictate, eliminating potential dictation downtime and accelerating overall clinician dictation accuracy.

Login Optimisation	Supports a faster login via a newly designed login screen. The Dragon Medical login can also be configured via a Windows®-based script or single sign-on software. An optional password can be assigned to a user, or the login can be managed via Active Directory.
NuanceLink	A continuously active link between Nuance Update Server, which provides content updates, and your Nuance Management Console server. This link provides updates to vocabularies, including new macro lists, medication lists, diagnosis lists and disease lists. All are updated via a live feed and sent directly to the Nuance Management Console, where—with a single click—administrators can then push all updates to users.
Automated License Tracking	Dragon Medical IT administrators can view, at any time, an overview of existing licenses use and the remaining license count for new users.

Dragon Medical One Analysis Tools:

Once DMO has been deployed and training has been delivered the customer has full access to DMO's built-in analytics and insights, a web-based admin portal that offers data insights, to ensure that users are using the solution as effectively as possible. Alternately Crescendo can manage the entire analytics process if the customer prefers.

Crescendo's cloud-based DMO feeds data into an analytics portal so your organisation can make more informed decisions and maximise your investments. This comprehensive portal provides access to an intuitive dashboard that displays key metrics and trends, like active users, hours of audio and peak usage. Usage details allow you to drill down to user level utilisation statistics—audio details, editing/change rates which is good indicator of individual user efficiency, voice command usage, AutoText usage, and more—and all usage detail data can be exported to Microsoft Excel for further analysis.

Dashboard

Intuitive dashboard design displays key metrics at a glance

- Active users + trends
- Hours of audio + trends
- Peak usage + trends

Usage details

Drill down to user level utilisation statistics and export data

- Audio length (minutes)
- Recognized characters
- Accumulative Change Rate (ACR)
- Voice command usage
- Autotext usage
- And more...
- Data can be exported to Microsoft Excel for further analysis

Online portal

Provides access to an intuitive dashboard that displays key metrics and trends, like active users, hours of audio and peak usage.

Data Security and Service Continuity

DMO is provided by Crescendo Systems as Software as a Service, with hosting located within the UK and the cloud platform being provided by Nuance.

Premium secure cloud providers

Nuance has partnered with Microsoft Azure UK to host DMO out of the Azure regions UK South and UK West. The secondary data centre is located in the Azure region UK South. The Microsoft Azure cloud is designed to be highly available 24x7 and delivers consistent uptimes of 99.95%. Details of Microsoft Azure in the UK are available here <https://azure.microsoft.com/en-gb/>.

Microsoft Azure meets a broad set of international and industry-specific compliance standards. Details of all certifications per region can be found at: <https://azure.microsoft.com/en-gb/overview/trusted-cloud/>.

Nuance security measures

In addition to the core secure services offered by Microsoft Azure, Nuance has implemented numerous additional security measures to protect customer data.

Engineered for security

Nuance employs software development and engineering security best practices. We develop according to Secure Software Development Lifecycle and utilise Veracode for static code analysis to scan for vulnerabilities. Each release is scanned prior to production release and all critical and high issues are resolved before production rollout.

Data transmission—encryption in transit

Nuance speech-enabled client applications stream audio in real time to Nuance cloud services for speech recognition processing. All communication between client applications and Nuance cloud services is transmitted via HTTPS utilising TLS 1.1 or TLS 1.2, with an AES 256-bit cipher algorithm.

Security standards and transmission protocols are constantly evolving in response to new security threats. To that end, we monitor security standards and perform external audits to ensure that our data centres meets the highest standards for secure data transmission. Our Nuance cloud services hosting environments routinely receive an “A+” rating from Qualys SSL Labs, which performs a deep analysis on our TLS endpoints. Among other things, the test checks the strength of our certificates, supported protocols (TLS 1.1, 1.2), supported ciphers, and vulnerabilities in our configuration.

Data storage—encryption at rest

Nuance safeguards all customer data that resides in Nuance or Nuance Azure data centres using encryption at rest. At the Nuance Azure data centres Nuance cloud services leverage Azure Managed Disks with Storage Service Encryption (SSE) to persist all customer text and audio. Customer metadata, such as licensing information, user accounts, etc., are stored in SQL Server databases utilising Azure’s Transparent Data Encryption. In all UK data centres AES 256-bit encryption is implemented to ensure the highest level of protection for data at rest.

Data retention and usage

Audio files and text are stored in the Nuance data centres to “train” and optimise the speech engine for individual user profiles, and to improve speech recognition accuracy for every user. The audio and text that Nuance stores in its data centre is largely anonymous. DMO does not have direct access to the patient record and does not require any patient

metadata. For example, if a physician dictates “the patient has community-acquired pneumonia,” there is no stored information that associates that information with an individual patient.

Data centre security

In addition to the core Azure data centre security, Nuance employs many industry best practices to further safeguard customer data and bolster the overall security of Nuance cloud services.

- Physical access. Physical access to the data centres is secured using many advanced security techniques, including advanced biometrics. For Microsoft Azure data centres Nuance employees do not have or need physical access to the data centre.
- Electronic access. Nuance follows the requirement of “minimum necessary” when granting electronic access to the data centre for support purposes. All requests for electronic access are subject to VP-level approval. A list of all Nuance employees with access is submitted annually to NHS Digital as part of Nuance’s IG Toolkit re-certification.
- Two-factor authentication/jump hosts. When accessing the data centre, all Nuance employees are required to use two-factor authentication. In addition, all production access is via an intermediate “jump host,” which provides an extra level of insulation.
- Anti-virus and malware protection. Nuance has deployed Trend Micro anti-virus to proactively protect the Nuance cloud services from virus or malware infection.
- Intrusion detection and protection system (IDPS). Nuance leverages Trend Micro’s IDS solution, which examines every packet that is transmitted to the data center for potential irregularities.
- Penetration testing. Nuance utilises a third-party service to conduct annual penetration testing against the hosted Nuance cloud services. Vulnerabilities that are discovered are resolved with the highest priority.
- Patches and updates. In addition to penetration testing, Nuance operations personnel perform monthly scans of the Nuance hosted services using Nexpose to identify potential vulnerabilities and their related remedies. Based on the severity of the vulnerability, the vendor patch is tested and deployed to production.
- Security monitoring. To provide an integrated comprehensive view into the security status of Nuance cloud services, Nuance leverages Azure Operations Management Suite (OMS) and other tools. This provides a “single pane of glass” that gives real-time insight into all security aspects of our operations

High availability and service continuity

Nuance has partnered with Microsoft Azure UK to host DMO out of the Azure regions UK South and UK West. The secondary data centre is located in the Azure region UK South.

The services are deployed in an active/stand-by configuration, with the primary data centre taking live traffic, and all relevant data is replicated to the secondary data centre continuously. In the unlikely event of a data centre failure, all traffic will be rerouted to the secondary data centre. The potential for data loss in the event of an outage, Recovery Point Objective (RPO), is 15 minutes or less. Within each data center, the system architecture of Nuance cloud services provides the following high-availability features:

- Fully redundant network infrastructure, including load balancers and switches
- Multiple clustered application server
- High-availability network storage with fibre optic connections
- Clustered database server
- Clustered and extensible speech server farm

Secure and robust cloud offering

Our security practices, combined with our highly available and redundant infrastructure, ensure that your physicians will enjoy fast, secure, and uninterrupted clinical speech recognition.

On-boarding and Off-boarding Processes

Following an order for DMO, this section describes the Crescendo professional services teams approach to engaging with the client during the implementation phase. It describes the makeup of the Crescendo team and recommendations for client participation along with a description of the services and deliverables expected from each.

The purpose is to describe how Crescendo will assist the client to achieve a smooth rollout of Dragon Medical One (DMO) and to maximise their ROI in the software by ensuring that the product is implemented in the most efficient way and staff are fully equipped to make best use of its tools and features.

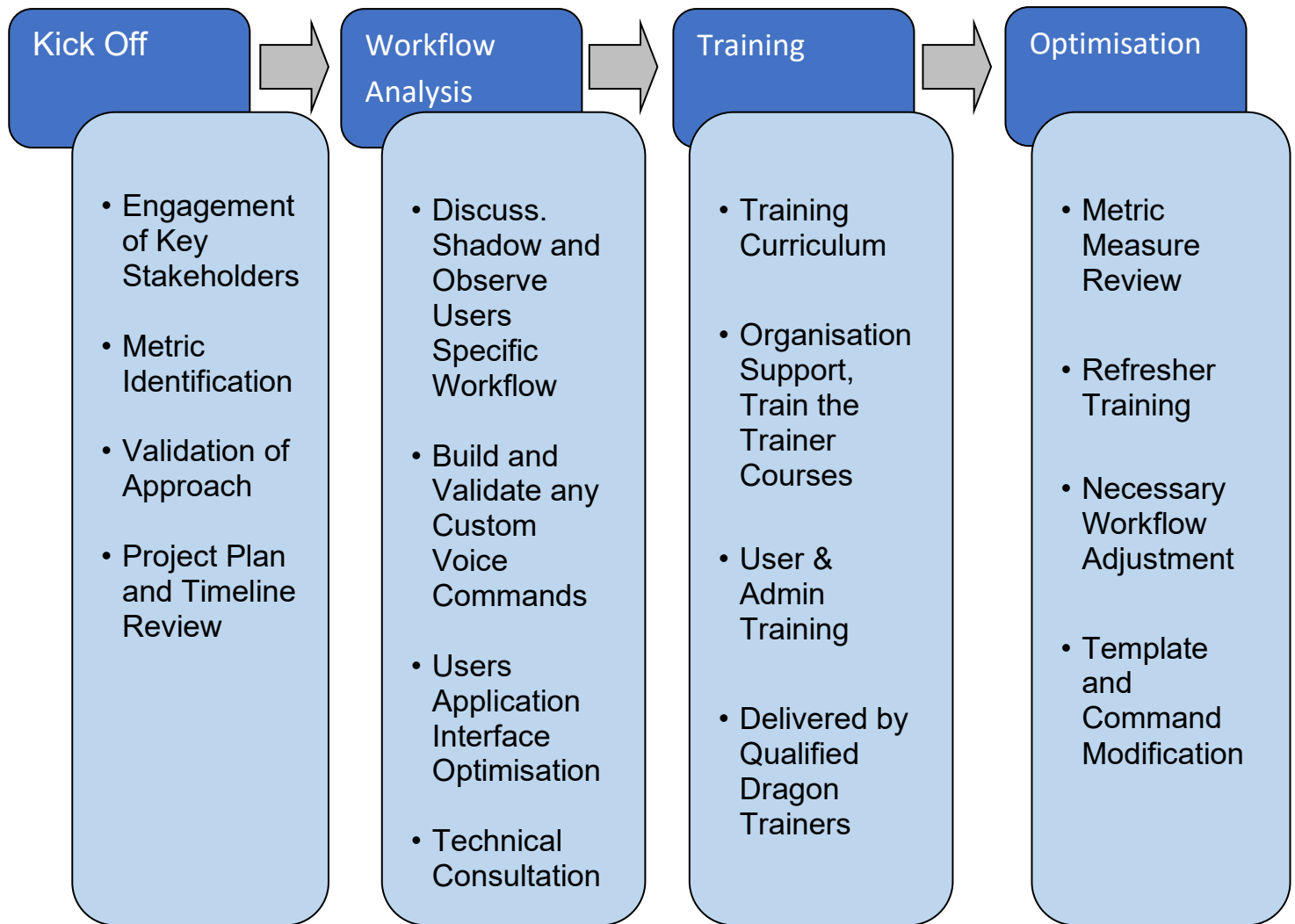
Planning Services and Methodology

Planning Services include project management activities such as definition and management of project goals; development and tracking of implementation plans; training plans and scheduling; change management; managing and driving resolution of issues log; regular status calls and post training follow up activities; strategic alignment to make sure the project is aligned to the organisational goals.

RESPONSIBILITIES:

1) Crescendo Project Manager:

- Guides Client through implementation process
- Provides guidance around planning deployment and end user support
- Guide Client in developing custom command naming convention standards
- Guide Client in developing a Support Strategy
- Confirm schedules and dependencies for training activities
- Host and manage project, technical and training planning meetings
- Track project to ensure on-time delivery. Ensure project is tracking to project objectives. Tracks issues and risks
- Coordinate internal and external resources that are assigned or critical to the project success.
- Educate and guide Clients on best practices and recent updates from Supplier that are not published yet in formal documented delivery documentation
- Coordinate the implementation and training events and evaluate project risk for knowledge obtained through training attendance and training skill set reviews
- Review feedback from training, determine lessons learned, and continuously improve training process
- Complete the formal project close and transition to Crescendo Dragon Medical One Client Support



2) Crescendo Technical Consultant:

- Review pre installation requirements
- Review client workstation pre installation requirements
- Install NMC applications
- Install profile optimisation server application
- Advise client IT on Dragon client roll out
- System testing

3) Crescendo Application Developer:

- Build word lists
- Create custom commands and templates

4) Crescendo Application Training Specialist:

- Preparation of training documentation

- Document current workflow
- Document proposed workflow
- Test proposed workflow
- Admin/User Training
- Adjust workflow based on user feedback
- Create user profiles and assign licences
- Provide go live support

Customer Organisation:

1) Client Project Manager:

- Has the authority to drive project and make project decisions
- Serves as the main contact for the project deployment
- Identifies and manages Client project team
- Coordinates Client resources for all activities, ensures attendance as needed
- Review feedback from provider training, determine lessons learned, and continuously improve training process
- Communicates timeline expectations and constraints
- Attend regular status meetings
- Identify and provide timely access to all stakeholders with material input to the overall requirements for the Project
- Approve Custom Command Naming Convention Standards
- Approve and communicate Support Strategy
- Schedule Client training as defined
- Coordinate activities to measure success metrics

2) Technical Leads:

Understand project timeframe, determine resources for project

3) Training Lead:

Provide insight on lessons learned on previous IT projects, assist with scheduling, allocate resources to shadow training events or attend Train-the-Trainer (if applicable)

Deliverables to be provided related to Services being delivered

Dragon Medical One (DMO) User Guide/Training Material

Workbooks/Manual to guide an organisation through a successful Dragon Medical One implementation and training

Kick Off Meeting

Client specific presentation created by Crescendo to officially initiate the DMO project

Implementation Plan

A customised detailed list of phases, milestones, and tasks including resources, dates and status

Implementation and Adoption Checklist

A comprehensive list of recommended tasks to complete for a successful implementation

Risk Log

List of identified risks that may impact the implementation along with impact assessment and mitigation plan.

Issues Log

List of identified issues during the DMO implementation. This will be used to track issues and drive to resolution

Lessons Learned

User to document what happened during the project, determine why it happened, and action steps/recommendations to take for future planning

Adoption Advancement Recommendations

Based on the Lessons Learned meeting, Crescendo will make recommendations for additional Dragon adoption

Training Services:

Online Training Courses:

Crescendo offer dedicated DMO training courses online for both users and administrative staff. The courses are 90 minutes, detailed but straightforward and explain how to maximise the system for each group of users. Onsite courses are also available for individuals or groups of users.

Course Lengths are 90 mins for individual users or 3 hours for group classroom type training.

'Train the Trainer' Courses:

Crescendo can provide training services to individuals or groups if required but some organisations with training departments choose to adopt a 'Train the Trainer' strategy. Crescendo Dragon instructors will ensure the internal training team acquires the skills needed to train end users. Internal trainers acquire classroom knowledge and also shadow a DMO trainer to gain experience; they are then observed during their first training sessions which enables feedback, mentoring and coaching to build a solid foundation for staff to become skilled and experienced DMO trainers.

The 'Train the Trainer' Program:

Operates on a 'See one, Do one, Teach one' principal. While classroom learning of the software is important for skilled DMO trainers, they can develop this knowledge further by watching a training session conducted by an experienced trainer. As trainees teach sessions on their own their knowledge on the subject improves and they develop teaching skills and can field questions from real providers who are learning the software for the first time. All of this happens under the watchful eye of an experienced Crescendo trainer who can provide guidance and valuable feedback.

Refresher Training:

Once basic training is completed Crescendo also offers efficiency training packages to ensure end users receive the training they need to adopt and optimise the performance of DMO in their specific environment. Refresher training ensures user satisfaction and adoption within a few months of initial use by reviewing their experiences. Once end users have been using speech recognition for a while questions that were not obvious during the initial training can now be answered and addressed successfully. In fact, all feedback regarding success and challenges are dealt with as part of the refresher training course. The opportunity to address questions early, monitor initial satisfaction and performance levels will prevent end users from future frustration, thereby reinforcing continued and productive use.

Off-boarding Process:

- When the contract ends all user's data is deleted.
- There is no requirement to extract the data as this was simply the audio to create the text, it is not kept in the system for future reference.
- At the end of the contract the users no longer have access to the software and are not able to use the software to dictate in to their computer.

Support Services:

Note: Crescendo Support Services are included within the (Annual/Monthly) Dragon Medical One (DMO) Subscription Fee.

The DMO solution is supported by Crescendo's full time technical support team who operate the Customer helpline and support centre in the UK. The technical support team's normal hours are Monday-Friday, 9am-5pm GMT

Crescendo SLA

Crescendo also extends industry-standard 24 x 7 emergency support to its customers. For level 1 Emergency and level 2 urgent situations Crescendo offers a one-hour response to support calls. For level 3 faults Crescendo will respond within four hours and for level 4 faults response time will be within one business day.

Escalation	Description
Level 1	Emergency situation where a fault is affecting the whole operation of the system thus rendering it inoperable
Level 2	Urgent situations where important features of the System are not working correctly.
Level 3	Faults in System capability which do not affect the delivery and presentation of user data to target sites.
Level 4	Cosmetic problems which do not affect the operation of the system but can be classed as minor defects or transient faults.

Ordering and Invoicing Process:

Ordering is completed in accordance with the G-Cloud 15 Call-Off Contract

Termination Terms:

Contract length is a minimum of 12 months. Termination is in accordance with the Supplier terms and conditions.

Technical Requirements:

Specifications.

Dragon Medical One supports the following hardware and software. For more information, contact our support team.

Operating systems.

32-bit: Microsoft Windows 7, Microsoft Windows 8 and Microsoft Windows 8.1. Make sure that the latest service pack is always applied.

64-bit: Microsoft Windows 7, Microsoft Windows 8, Microsoft Windows 8.1, Microsoft Server 2008 R2 and Microsoft Server 2012 R2. Make sure that the latest service pack is always applied.

Microsoft .NET Framework 4.5 (or higher) is required.

Processor speed.

Minimum: 1.7 Ghz

Recommended: 2.8 Ghz

RAM.

Minimum: 512 MB

Recommended: 2 GB

Web Browsers.

IE 11+, Chrome v65+

Internet Connection.

48kbps and higher

Microphones.

Any microphone that can record audio data in 16 kHz, 16 bit mono format is supported. PowerMic Mobile app for use on Android/iOS is available for use with DMO.