

MDSAS G-CLOUD 15

Service Definition



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Medical Data Solutions and Services (MDSAS)

MDSAS is an award-winning healthcare IT development consultancy with particular experience in national NHS IT development, including registries, public health surveillance, patient home therapy systems (for direct use by patients for outcome reporting), video consultation and referral/triage management with smartphone App-based image capture.

With this comes experience of successfully working collaboratively with stakeholders in the NHS and beyond, including clinicians, commissioners, managers, monitoring authorities, technology and Information governance staff to ensure our comprehensive understanding of requirements and a holistic approach to development to meet the range of user needs.

We operate an Agile development environment whereby staff regularly interact at all stages of the project.

MDSAS staffing culture initiatives have resulted in a very low staff turnover, which we see as a key element in our ability to provide a highly skilled, experienced and stable service to clients.

MDSAS Organisational Infrastructure

MDSAS has an entirely in-house infrastructure, with our own development, reporting, and support staff. MDSAS solutions are hosted either in NHS data centres with mirrored failover protection ensuring reliable and proven connectivity to all NHS sites, or on the Microsoft Azure platform, depending on customer preferences. However, it is also possible to host services on clients' own hosting platforms/instances. We have our own support desk providing user support (potentially first, second and third-line services) for live projects.

MDSAS are registered and approved with the NHS Data Security and Protection Toolkit (DSP) which is required and provides the necessary accreditation for companies working with NHS patient data.

MDSAS are also registered with government procurement frameworks. This includes the Digital Outcomes Framework, GP IT Futures and G-Cloud. We have a flexible approach to procurement and are willing to work with purchasers to fit to their specific requirements.

In relation to Cyber Security, MDSAS are ISO 27001, Cyber Essentials Plus and NHS Data Security and Protection certified.

Systems Development

We will use our proven software technologies for projects, providing functionality in line with the required specification. We specialise in online platforms that can be hosted on our hosting platform internally within the NHS on the HSCN network or externally via the Internet, depending on preference.

We use mainly Microsoft technologies which are standard throughout the NHS. This includes SQL Server and Data Analysis Services, Microsoft Reporting Services, ASP.NET, and Power BI.

A key strength of our solutions is compatibility with NHS technology restrictions which require compatibility with often old and unsupported software. This includes being able to function with internet browsers which are now unsupported by Microsoft but still used widely within the NHS.

Where possible we also utilise the very latest technologies to provide system availability on all devices such as tablets and phones, including using connectionless web-based systems which continue to function whilst no network connection is available.

Project Approach and Methodology

Project Methodology

MDSAS work with the scrum development methodology across all projects. We have found that the relatively short and regular sprint iterations and feedback loop highlight progress and any emerging issues quickly, enabling us to amend our plans on a timely basis. We plan continuously through each sprint and project development, amending roadmaps, backlogs and sprint plans as appropriate.

We also use elements of Kanban, with individual task cards on the development wall providing continuous visibility of progress to the whole team.

This approach works well for projects which will require iterative design/development phases at a distance and in a short timeframe, making the continuous visibility of rapid progress, vital to reduce project risk and deliver desired outcomes.

Shared decision making

We have close collaboration between MDSAS and clients throughout the development process, with initial objectives and goals framed early in the project, to ensure delivery of commonly understood outcomes. Decisions on project approach and measurement will be agreed and recorded on a centrally available decision log during the initiation phase of the project.

Where further design or development decisions are required from analysts or developers, investigation tasks or “spikes” will be added to the backlog for inclusion in a sprint to carry out the necessary analysis, with documented outcomes available for review. Where analysis and/or further discussion on options are required between the development team and the Product Owner, meetings will be scheduled to reach a decision.

Learning from mistakes

Mistakes often come down to a misunderstanding of requirements, failure to observe process or communicate on a timely and transparent basis with all parties. Through regular, supportive and open communication between users and analysts/developers, we would hope to ensure that the clarification of requirements was continuous and incremental. User research would be carried out each sprint, with prototype processes and models delivered to confirm acceptance on an ongoing basis.

Where issues are suspected, raising awareness of these at the earliest opportunity is imperative and should lead to a refined requirement, decision to be logged or realisation that further debate is required. Meetings to resolve will be transparent and inclusive, with the view that all stakeholders are involved to ensure that a commonly understood and acceptable outcome is achieved first time.

For mistakes that slip through these preventative measures, the sprint retrospective will be imperative. Open and constructive discussion of the root cause and the effects of the mistake enables the team to learn, both the resolution of the point in question, but also the collaborative and positive process to learning for the benefit of the future project efficiency.

Supporting product owner

Ideally, we work closely with clients and the designated product owner throughout the project. During an initiation phase, we will agree on attendance by clients or third-party development staff at sprint ceremonies, and on also protocols for accessing the Product Owner on an ad hoc basis.

We anticipate a point to point lead relationship between product owners and our product manager. We also value access at relatively short-term notice to staff working on the project as deemed necessary through our issue escalation process.

We can share all project documentation securely through a secure, shared document portal.

For continuous support, we believe we operate a standard set of scrum ceremonies as outlined in the table below. These relate to our current sprint timetable, with all dates references by sprint start date.

Sprint development process and timetable

Kick off activities such as working to create user stories, user personas etc. are not included in the regular cycle shown below.

Ceremony	Timing	Purpose	Attendees
Backlog grooming	-4 days 60 minutes	Agree prioritisation of stories and potentially themes for the following sprint Assess steps to completion and ongoing project metrics Formal re-prioritisation as required	Default: Product Owner Scrum Master Developers Business Analysts Testers/QA (full scrum team)

Sprint review	+11 days (day 1 of following sprint) 60 minutes	Assess progress through show and tell of completed user stories and accept completion of each story Identification of incomplete story points to be taken forwards	Default: Full scrum team
High level sprint planning	Day 1 60 minutes	Re-prioritisation of sprint for any brought forward story points Clarification of user stories added in backlog grooming Confirmation of resource availability and sprint capacity	Default: Full scrum team
Detailed sprint planning	Day 1 90 minutes	Breakdown of user stories to development tasks Finalise allocation of tasks	Default: Scrum Master Developers Business Analysts Testers/QA Ad hoc/optional: Product Owner
Stand ups	Daily, days 2-10 15 minutes	Brief summary of progress to review and plan daily activity What happened yesterday? What is planned today? What issues are impeding progress?	Default: Scrum Master Developers Business Analysts Testers/QA Ad hoc/optional: Product Owner

Sprints start on Thursday morning.

Stand ups occur at 10.30am, the latest start time under MDSAS flexible working.

Access to JIRA for all parties direct and/or through screen sharing will ensure that all artefacts, (demonstrations, documents etc.) are worked on collaboratively.

Location of team

The MDSAS team is primarily located in Salford. We recognise the need for close collaboration in the earliest stage of projects and would envisage early face-to-face meetings to establish working relationships, goals and an agreement of project approach with clients. Thereafter we would anticipate a mixture of remote (teleconference) and face to face meetings with the User Guidance Group as appropriate, to ensure successful delivery.

User Research

Where possible we like to involve users across the stakeholder community, to ensure the software is well rounded and meets all user requirements, without overburdening some user groups, to the potential detriment of operational usage. User feedback will ideally be sought from a range of stakeholders, following a structured protocol and using a variety of tools, including interview, workshop, phone calls, on-site observation and questionnaires.

We select the most appropriate research method on a case by case basis and ensure that findings are documented clearly, as the basis for future decision making.

Project Organisation

a. Toolset

Our main development tool is Microsoft DevOps, an on-line task and workflow management tool used to house the accepted backlog, allocate user stories and subordinate tasks to sprints, create simple dashboards and monitor sprint and project burndown as key development metrics.

We will include all project documentation, including specifications, documentation relating to the project organisation (records of meetings, including agendas, actions, decision support documentation, training and rollout material, stakeholder relationship management information etc.) and importantly the project Risk Register in DevOps.

The Risk register will be updated formally at regular progress and stakeholder engagement meetings but is also available for all users to amend throughout the project as risks are identified, closed and as risk profiles change. All registered users will receive notifications of changes, alerting them to changes in all elements of project documentation.

The software maintains full audit trail and version history of documents, so previous versions continue to be accessible.

Project Status Reporting

Through DevOps, we are able to monitor task progress, but also project and sprint burndown on a daily basis, enabling progress to be clearly shared and monitored.

We also produce a simple periodic status reports, monitoring project health from the widest project perspective. The report is updated for management purposes on a monthly basis and can be shared electronically.

System Design

a. User-centred Design

Our team has significant experience of developing and supporting national and international electronic platforms, Instrumental in the success of these systems has been the recruitment of users to guide development of requirements and functionality of the system.

Where we are aware of core user needs or requirements, we can work with these to flesh initial outlines for a potential solution, to act as a “straw man” at initial user interactions. Equally we can simply take the list of user stories/requirements and work from this to formulate an initial proposition, without seeking to influence any aspect of user interface or design. We have worked in both ways in the past and would consult to agree our base position during the inception phase. The findings from the discovery/initiation phase should be able to serve as the basis for any required straw man proposition.

b. User Recruitment

During the early development phase we will ensure recruitment of a range of user stakeholders covering all system functionality areas, including digitally excluded people.

For client central business stakeholders, we will work closely with the product owner and users.

c. Workshops and user testing and feedback

During the prototype design and development phases, a mixture of approaches will be used to ensure optimal feedback is obtained from all stakeholders including workshops, surveys and expert advisory meetings

d. Pilot and Live Planning

At the end of the development phase, where users will have had the opportunity to test functionality and ensure user requirements have been met to an acceptable standard, we will look to validate what we have learned from the iterative creation of designs and prototypes with the product owner and stakeholders.

Ideally this will be achieved through a collaborative retrospective, reviewing the successful prototype/processes for acceptance, showing how requirements evolved through the development phase and how the iterated prototypes met those revised user needs.

Risk and decision logs will also be reviewed to ensure a common understanding of the scope delivered.

Based on the comparison of build against scope, iterated accepted changes, mitigation of risks and system usability assured through testing, we will look to sign off on basis for progression to live.

We will construct a roll out plan during the development phase. This will incorporate collateral built throughout the development phase to support user understanding of the new system and guides round efficient processing. Review and acceptance of the rollout plan will also form part of the development sign off process.

Assumptions on customer resourcing

Overall, it is our assumption that in the initiation and design phases, the MDSAS team will be responsible for analysing and gaining agreement to any refinements to the requirements and processes identified in discovery and for confirming a final software solution that is capable of meeting user needs.

On external resources, we assume: -

- a. a single client Product Owner exists, who will define and clarify all requirements as necessary, act as the key contact with the MDSAS account manager, with the analysts/developers for requirements clarification and also with the scrum master on process and reporting issues
- b. a technical owner of the overarching infrastructure requirements, the key liaison with our technical architect in ensuring an integrated solution with correct specifications
- c. Stakeholders/users who will conduct user ongoing ad hoc reviews and acceptance testing on prototype processes, designs and products

MDSAS Data Collection and Registry - Project Portfolio Examples

NHS UK National Haemophilia IT Strategy

Working with NHS England, UKHCDO, Commissioners and Trusts to implement the World's largest Haemophilia managed network for audit of the high-cost service - where product costs are £200+ million per annum.

NHS National Immunoglobulin (IVIG) Demand Management

Working with Deloitte, NHS England and 165 Trusts on UK-wide prescribing control and audit of Immunoglobulin use within the NHS. Immunoglobulin is a high-cost product costing £400+ million per annum.

EUHASS (Haemophilia Adverse Events Surveillance System)

Collection of surveillance and population data, covering over four hundred sites in Western and Eastern Europe and including a red alert warning service. Supported by Pharma and EU funding.

International Patient Home Therapy Application

Used by patients to record their therapy and outcomes. Increasingly utilised by Pharma for data collection in clinical studies where it has been used internationally (UK, USA, China, Japan, Italy and Spain). Over 3 million entries have been made by patients.

NHS Referral Platform Databases (Spinal Cord Injury, Dermatology, Specialist Burns)

National system with innovative App image capture, managing and auditing referrals to specialist services. These include the Spinal Cord Injury Registry, Burns, Plastics, Trauma and Dermatology referrals. It has facilitated over 60% drop in admissions to specialist services.

Costing and Timelines

We provide costing based on our interpretation of initial requirements. We envisage including an initial discovery/clarification phase, in which we will establish the collaborative approach to project completion with clients and refine a finalised set of requirements. This clarification phase will refine our understanding of the requirements, as we are aware there are areas where we need more information to be able to precisely shape a solution. The clarification process will help ensure that the possibility of inconsistencies in expectations or outcomes is minimised. Milestones and functionality will reflect this timeline.

Prices quoted are exclusive of VAT.

We split the development work into 3 phases:

Initiation

The initiation phase will incorporate refinement of already understood requirements and discovery of new or refined needs that may not have been fully identified or articulated, the creation of an overview project plan, the design and creation of a prototype system to ensure a solid framework for the construction of a fully working solution is shared and understood. build the framework for the alpha project, collaboration, clarification of scope, processes and methodologies and intended milestones and outcomes.

Iteration

The iteration phase will include the analysis, development and continuous testing of the prototyped solution through a number of iterations released to users as progressive prototypes.

Sign off and transition

During the transition phase, we will validate the prototype against the original scope, assess the readiness to transition to live, document outcomes and findings and provide recommendations for the introduction to service, including implementation planning.

Ongoing development

Should additional work be required beyond the scope of the fixed price agreement, MDSAS operate a rate card which will be used to cost any additional work. Rates are shown by day, with development days comprising on average 7 hours.

Current day rates are outlined in the SFIA document.

Risk Management

Identification and mitigation of risks is a process carried out by MDSAS for all projects regardless of size, assessing risks based on requirements, proposed solutions, user adoption, information security, working practices, technology restrictions etc. and is a continuous process picked up at every phase end and sprint review.

Risks will be incorporated into a central Risk Register, shared on our Confluence portal, for access by the client project team.