

Data Visualisation Services

Service Definition Document

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1. Introduction

1.1 Overview

MASS recognises the vital importance, in today's digital environment, of organisations being able to interpret and communicate data effectively to inform decision-making and drive performance. Drawing on extensive experience in project delivery and digital transformation, our Data Visualisation Services are designed to convert complex datasets into clear, actionable insights using dynamic, interactive visual tools. By presenting information in an accessible and engaging manner, we empower teams to explore trends, identify opportunities, and respond proactively to emerging challenges.

Our data visualisation solutions are always tailored to meet the distinct needs of each client. We collaborate closely with stakeholders to understand their objectives, data sources, and reporting requirements—delivering dashboards, reports, and analytics platforms that enhance transparency and support strategic initiatives. Whether your aim is to improve operational visibility, monitor KPIs, or communicate results to a wider audience, MASS provides the expertise and support needed to maximise value from your data assets.

1.2 Purpose of the Document

The purpose of this document is to provide a comprehensive overview of MASS's Data Visualisation Service, outlining how we enable organisations to transform complex datasets into accessible, actionable insights through interactive dashboards and reports. It details the methodologies and consultancy offered by MASS to support clients in interpreting data effectively, facilitating informed decision-making, and driving business performance. By presenting information in a clear and engaging format, this document serves as a practical guide for clients looking to enhance transparency, monitor key metrics, and achieve sustained improvements in their operations through bespoke data visualisation solutions tailored to their unique needs.

2. Service Overview

2.1 Description of Data Visualisation Services

MASS delivers dashboards and reports that provide users with end-to-end insight. Although visualisations within Excel sometimes constitute a viable option, we work primarily within Power BI, designing robust ETL processes that extract, cleanse and standardise the data from multiple sources before populating models ready for analysis, reporting and visualisation. This engineered foundation ensures accuracy, performance, and trust. Additionally, we create intuitive and interactive dashboards that translate complex data into clear business stories. Stakeholders gain timely, actionable insights, confident that decisions are driven by governed, reliable data. From raw data to executive ready visuals, the team turns information into measurable value.

2.2 Objectives

Self-service dashboards (such as the one, below in Figure 1) are central to our objectives in visualising data. Interfaces of this sort enable management self-service reporting, performance tracking, and trend analysis without reliance on technical teams. Interactive dashboards provide near real-time insight, faster decision making, and consistent metrics across the organisation. Leaders can explore data confidently, identify opportunities and risks early, and focus on strategic action. Enabling this kind of independence on the part of managerial personnel is a strong guiding principle for MASS's data visualisation services.

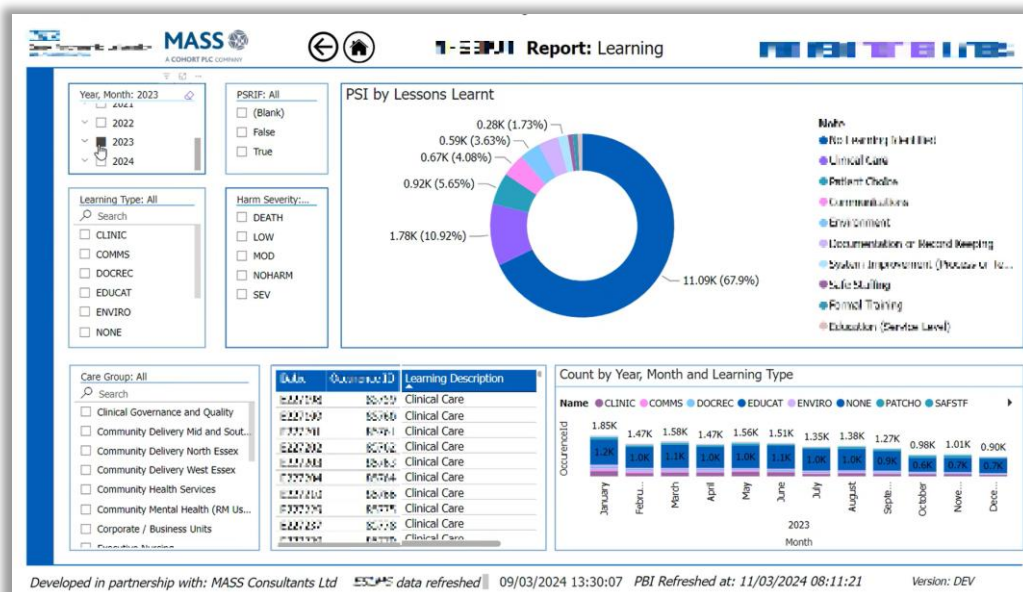


Figure 1: Our bespoke dashboards incorporate visualisation of incident reporting. (Note that this visualisation uses test data, and the client's name has been pixelated.)

3. Data Management Process

3.1 Implementation

MASS's data management process underpins the reliability and effectiveness of our data visualisation services. We begin with robust data ingestion, sourcing information from multiple systems and ensuring secure transfer into our environment. This is followed by thorough data cleansing and standardisation, where inconsistencies and errors are addressed to guarantee data accuracy and integrity.

Next, we employ Extract, Transform, Load (ETL) pipelines to automate the movement, transformation, and integration of data, ensuring it is structured and ready for visual analysis. Our team uses a combination of manual quality checks and automated validation routines to monitor for anomalies and maintain high standards throughout the process. Data is then securely stored and governed with strict access controls, supporting compliance with industry regulations and best practices.

Once prepared, data is modelled to optimise performance and usability within reporting platforms like Power BI. This foundation allows us to deliver interactive dashboards and reports that provide actionable insights, all while ensuring data is consistently managed, up-to-date, and ready to support the decision-making needs of our clients. Ongoing monitoring and periodic reviews further ensure the process remains aligned with evolving business requirements and security standards.

3.2 Why MASS?

Customers choose MASS for data visualisation services because of our proven expertise, agile approach, and unwavering commitment to client success. With decades of experience serving the defence and security sectors, our team combines deep technical knowledge with acute business analysis to deliver tailored solutions that simplify complexity and drive meaningful insight. We are known for our transparent, client-focused service, adapting quickly to changing requirements while maintaining strict quality and governance standards.

The benefits of partnering with MASS include access to a highly skilled team, robust data management processes, and interactive dashboards that empower self-service analysis and confident decision making. Our services are underpinned by internationally recognised quality frameworks such as ISO 9001 and ISO 27001, ensuring reliability, security, and measurable outcomes at every stage. Clients gain not only accurate, timely, and actionable insights but also the assurance that every engagement is managed with professionalism, transparency, and a relentless focus on delivering measurable value. Our experience enables us to transform raw data into executive-ready visuals, helping organisations unlock opportunities and mitigate risks swiftly and effectively.

4. Team

The MASS data visualisation team is a dedicated group of professionals, blending a wealth of academic credentials with hands-on industry experience to deliver exceptional insight-driven solutions. The team comprises highly qualified data scientists and experienced data analysts, collectively offering over 80 years of expertise across the data management and analytics spectrum. Their academic backgrounds are robust, with the majority holding BSc and MSc degrees in fields such as data science and computer science, providing a solid technical foundation and advanced analytical capabilities. The team is also committed to fostering new talent, with two apprentices currently nearing completion of their BSc in Data Science.

The team is structured for clear governance and accountability, overseen by a designated Service Lead who manages project delivery and serves as a single point of contact for client queries or escalations. This ensures every project is professionally managed, transparent, and geared towards achieving client objectives.

The team's expertise encompasses the development and deployment of solutions across a wide array of technologies, including SSRS (SQL Server Reporting Services), SSMS (SQL Server Management Studio), Azure cloud services, Power Automate, Power BI, Mood, and Enterprise Operational Intelligence platforms. This technological breadth allows for the delivery of innovative, scalable, and efficient dashboards and visualisations, tailored to the unique and evolving requirements of MASS's clients.

For smaller-scale projects, the team undertakes all business analysis activities internally, while larger engagements benefit from the broader capabilities of MASS, drawing on additional business and financial analysts as needed. The result is a highly capable and agile team, well-equipped to deliver comprehensive data visualisation services that empower self-service analysis, inform strategic decision-making, and unlock actionable insights for clients across sectors.

4.1 Data Visualisation Team Structure

MASS's data team comprises a dedicated team of highly skilled data scientists and analysts, all of whom are committed to delivering exceptional data visualisation services. The team operates within a robust governance structure, ensuring clear lines of accountability for the provision and quality of our services. A designated Service Lead is responsible for overseeing project delivery and acts as the single point of contact for all client queries or escalations. This approach provides our clients with the assurance that every engagement is managed with professionalism, transparency, and a strong focus on achieving their objectives.

4.2 Team Capabilities

The MASS data team comprises highly qualified data scientists and experienced data analysts. Their backgrounds encompass everything from data quality remediation to the successful deployment of complex ERP systems. For smaller-scale engagements, the team undertakes all business analysis activities internally; for more substantial projects, they are able to leverage the broader capabilities of MASS, drawing on business analysts, financial analysts, and other specialist resources as required. The team is adept at delivering comprehensive data solutions, with particular proficiency in developing reports, interactive visualisations, and dynamic dashboards tailored to client needs.

5. Assuring Quality

5.1 Relevant Standards

At MASS, we are committed to maintaining the highest standards of quality across all aspects of our service delivery. Our quality assurance processes are underpinned by internationally recognised frameworks such as ISO 9001 for Quality Management Systems and ISO 27001 for Information Security Management, ensuring that our operations adhere to rigorous best practice benchmarks. We implement structured project management methodologies, such as PRINCE2 and ITIL, to guarantee consistent, repeatable processes and measurable outcomes throughout the project lifecycle.

Quality checks are embedded at each stage of service provision, from requirements gathering and solution design through to deployment, support, and continuous improvement. We utilise detailed documentation, peer reviews, and regular internal audits to monitor compliance and drive ongoing enhancement. Responsibility for quality assurance is overseen by a dedicated Project Manager, who coordinates efforts across the team and acts as a single point of accountability, while all team members are empowered and trained to uphold our quality standards. This approach ensures that every engagement is delivered with precision, transparency, and reliability, enabling us to consistently meet or exceed client expectations.

5.2 Client Communication

Throughout delivery, MASS ensures effective communication with our clients to allow for the smooth operation and implementation of our services.

We are comfortable with the utilisation of various different channels of communication, both logical and physical, and will use both formal and informal methods to ensure consistent and coherent delivery of our services. During a kick-off meeting or during regular monthly meetings, our Team Lead will generally meet our client's team lead. On a more routine basis, our data engineers will speak to somebody at the same level on the customer side. We ensure frequency of communication appropriate to whatever the situation demands, generally daily or at least weekly.

Communications will be clearly defined with the client during the transition to service delivery, in a manner that suits them. At the outset of a new project, the team will create a new SharePoint site on the MASS tenant and grant Guest Access to customer staff. This allows a single-point-of-truth and co-editing with version control. MASS maintains robust and proactive communication with clients throughout every phase of service delivery, ensuring a seamless and effective implementation of our solutions.

We utilise a comprehensive range of communication channels, both digital and in-person, and adopt formal and informal approaches as appropriate to the requirements of each engagement. Typically, initial and regular meetings such as project kick-off or monthly reviews are conducted between the Team Lead at MASS and the client's designated lead, fostering alignment and strategic oversight. On a day-to-day basis, our data engineers coordinate directly with their counterparts on the client side to ensure operational continuity. The frequency and format of interactions are tailored to client needs and project demands, with communication occurring daily or weekly as necessary to maintain momentum and clarity.

Our communication protocols are collaboratively defined with each client during the transition to service delivery, ensuring they are fully aligned with the client's preferred methods and expectations. At the commencement of each new project, a dedicated SharePoint site is established within the MASS tenant, with Guest Access provided to authorised client personnel. This approach guarantees a single source of

truth, enables secure co-editing, and offers robust version control for all project documentation and deliverables.

5.3 Information Sharing

MASS ensures any information shared with our clients is done so in accordance with best practice and the standards we adhere to, as described in Section 5.1.

Our team's proficiency with SharePoint ensures we are able to set up sites for our clients and grant them access to them, immediately implementing the necessary elements (such as libraries) to ensure information is shared clearly and fully. This facilitates the process of sharing information, avoiding any potentially complicated levels of governance associated with joining clients' systems, as they can use their own hardware and still access MASS's system.

We will work with clients during transition and delivery to ensure the appropriate method of sharing information that suits them.

6. Security

6.1 Security Management

Organisation of Security at MASS is mandated by policy and legislation, and we are accredited to ISO27001. We focus on the MOD approach to Security role, structuring for Secure-By-Design, specifically JSP 440 Leaflet 5C and Industry Security Notice 2023-09. Several roles included, while not mandated in these policies, are a core requirement to assuring the Confidentiality, Integrity, and Availability of the system and its functions, specifically the UK Data Protection Act, JSP 490 and export legislation.

Security Management for the delivery of our services, including all aspects of physical, personnel, information, and technical security, is governed by MASS's Company Security Controller (CSC), who operates as Security Manager for individual contracts, in accordance with our defined MASS Security Instructions.

One of two paths is generally adopted with respect to security. On one hand, the data team has previously made use of its own lab environment to develop solutions which can subsequently be deployed on the customer system. On the other hand, some contracts have called for the data team to be given access to the customer's development environment. MASS is comfortable with either of these options, observing the highest standards of security at all times and abiding by all requisite accreditations.

6.1.1 Physical Security

All MASS employees and visitors to our premises adhere to security protocols in accordance with the MASS Security Instructions.

6.1.2 Personnel Security

All MASS staff are required to have the appropriate security clearance as required.

6.1.3 Information Security

MASS staff work in accordance with the Government Security Classification Policy, JSP440, the Security Aspects Letter and the MASS Security Instructions when dealing with any protective marker information.

7. Prior Experience

MASS has extensive experience delivering our data services to a range of customers in both the private and public sectors. The following are three case studies which evidence MASS's capabilities in delivering these services.

7.1 Provision of Data-Led Infrastructure

MASS provided data-led infrastructure support services to a rapidly growing smart meter division for one of our clients. The business was originally using traditional on-premises infrastructure and Enterprise Resource Planning (ERP) and needed to more rapidly adapt to changing market data exchange and regulation needs, customer service expectations and integration with new partner systems.

This included support to reduce costs and speed up deployment time by using Microsoft Azure hybrid cloud technologies to enable integration ERP, Customer Relationship Management (CRM), Business Process Management (BPM) and Management Information (MI) systems and data. We took a balanced approach to managing our customers innovation portfolio, covering all types of open innovation, as well as business and technology led innovation. An example of such business-driven innovation is when we discovered that the client could more efficiently allocate smart meter engineering time. We held workshops with users, collaborated with internal and external communities of practice, our R&I team researched and experimented with new technologies and methods for forecasting and assignment.

The selected solution resulted in a significant reduction in unallocated engineering time, shown below, in Figure 2, and (as more appointments were completed) improvement in customer satisfaction. We also use our internal 'tech watches', forums and 'lunch and learn' sessions to bring new technology-led innovation (models, methods and tools) to customers. For example, our in-house R&I team discovered recent improvements to Azure cloud database storage could significantly reduce consumption costs for some use cases. We brought these new ideas to the client, improving speed and the cost of moving data across development, test and production environments.

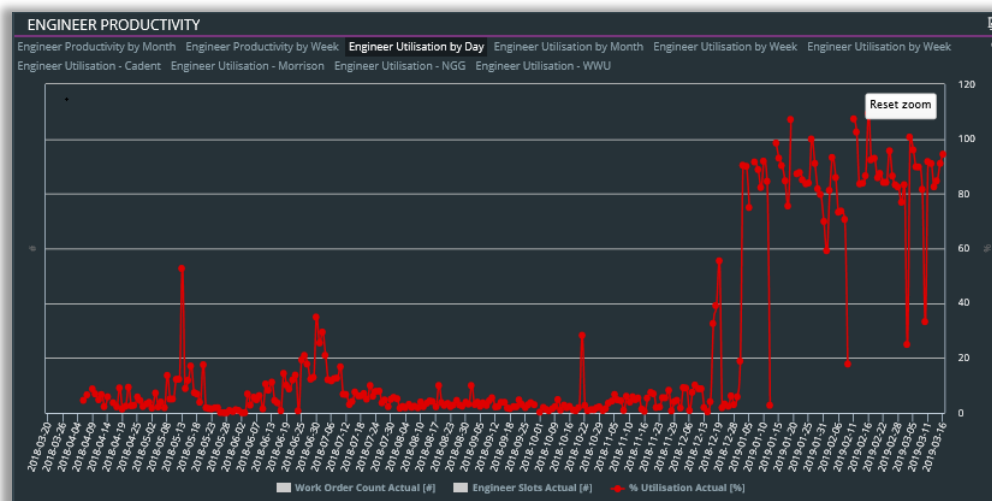


Figure 2: MASS's data visualisation tools and dashboards show clear statistical analysis. This chart shows engineer productivity over time, clearly highlighting the benefits of our implemented scheduling system.

7.2 UK Healthcare Provider Lessons Management Platform

Dates: 01/03/2022 – 31/05/2024

Contract Value: £147,000

Our customer was a large UK-based healthcare provider that was using a legacy system to record patient safety incidents, but the database generated was unusable for analysis and effective data management. The customer's Lessons team, whose task is to learn lessons from previous incidents, required a complementary system to enable effective data management of existing incident records, collate similar incidents and manage the generation of new policies, procedures and equipment to address the incidents' cause.

To reduce ongoing licensing costs and to improve future maintainability, MASS created a single system based on the Microsoft licensing that the customer had in place – PowerAutomate, PowerBI, PowerQuery, SharePoint, and SQL Server.

Customer workshops provided a forum for developing a workflow to cover the process from receiving incidents to the instigation of new policies, procedures or equipment to reduce reoccurrence of similar incidents. Formal Universal Modelling Language (UML) State Transition Diagram notation was used to define the process and ease the transfer to developer resources. This diagram uniquely identified those responsible for the transition of an incident from one state to the next.

Our solution was developed on MASS resources, configured to replicate the customer environment, before being deployed with limited functionality on the customer environment to ensure we received a range of customer feedback. Subsequently, we developed it iteratively on the customer environment using the Agile process.

An Extract Transform Load (ETL) process was created to harvest information from the legacy system, with PowerBI used to visualise the harvested data in reports, visualisations and dashboards. This was a useful first phase, with early benefits realisation allowing users to self-serve and interact with data in ways not supported by the legacy system.

When investigating common safety incidents, the PowerBI dashboards allowed users to filter and group by Category, Sub-Category, Date and Time, Environment, Ward, Team, etc. The lessons team could then decide where to focus their efforts. MASS's system enabled an effective Lessons Learned process.

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MASS created a PowerApp that allowed users to create a 'Cluster' of similar incidents which could be treated as a single item for more efficient resolution than dealing with several incidents discreetly. Once created, users could allocate 'Actions' to the Cluster and then associate those actions with an Action Body Lead (ABL) – the individual responsible for the creation and implementation of procedures/policies to address the Action.

The ABLs could then devise a policy or procedure or procure new equipment with the supporting documentation uploaded through the app. Once uploaded, documentation could be accessed by all users via the app's Cluster page. This supporting documentation was subject to version control and could be subject to retention policies that support GDPR compliance. Self-serve dashboards helped management identify logjams and re-allocate resources to ensure that all Clusters were addressed within defined time periods. With the MASS system installed, there are no on-going licensing costs and the foreground IP

rests with the customer, who can configure or further develop the solution without MASS assistance, where suitable internal development resources are available.

7.3 Improved Data Architecture

Contract Value: £350,000

Dates: 03/06/2021 – 30/04/2024

A large law-enforcement agency had several discrete IT systems, each of which was used to manage the investigation of a particular type of crime. These systems had grown over time - with no overall holistic approach to data and content management – and, whilst some technology may have been appropriate 20 years ago, it was recognised that modern solutions may bring much needed benefits. The existing IT solutions had the following characteristics:

- No commonality in case management, the IT solutions included OneNote, Excel, etc.
- No data sharing. The IT solutions worked in isolation, so data from one investigation was not available to other investigations.
- Difficulties in searching for information across the enterprise.

The law-enforcement agency's business included many manual data processes that were based on spreadsheets and manual data manipulation. One process took 10 person-days to gather data and shape it into a query format to produce reports; MASS automated this process and the time taken to produce the report has reduced to 2 person-days of analytical effort.

A MASS Data Architect looked at the entirety of the agency's operation to map how data was being handled and several solutions were suggested: 1. 160 separate improvements that could be implemented in a stand-alone manner but part of a comprehensive roadmap leading to improved working practices. 2. A comprehensive digital-twin database that could be accessed by all investigative teams to allow data sharing and data discovery.

Two separate deployment plans were created using either the big bang or incremental approaches. 3. An automated process was prototyped to handle telephone call data that maintained evidential provenance and included interactive, self-serve visualisations that allowed investigators to discover relationships between telephone numbers.

Many workshops were conducted with both end-users and management to determine requirements, which were either a continuance of the existing business process or leveraging the new functionality that SharePoint could offer. MASS's Data Architect recommended SharePoint as a content management solution in place of the current file share, which had grown to a point where searching was not possible.

The new SharePoint site was prototyped in the MASS labs environment with the law enforcement agency's staff having guest access that allowed them to use their own corporate laptops to use the development environment. This encouraged rapid development, as users could make requests during a workshop and see the solution a few minutes later on their own hardware. MASS also created and delivered courseware to upskill staff in both the basics of using a generic SharePoint and the particulars of how to use the agency's SharePoint site.

We worked with the agency's communications team to develop a SharePoint-based intranet where news articles, HR policies and other routine business information could be published. At the end of our work, the agency's management had a clear roadmap to a new way of working that would deliver savings and efficiencies by reducing person-time to achieve objectives and facilitate data discovery, exploiting existing data to derive previously

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