

Application Development Services



BAE SYSTEMS

We are Techmodal

A collaborative data consultancy, bringing the capability and creativity you need to unlock the strategic potential in your data.

As Defence and Government experts, we understand the unique complexity of your constraints. Adaptive, imaginative and iterative, we meet you where you are – and start with what you have.

We focus on making more of your existing tools and technology. Applying smart thinking and continuous improvement to uncover the insight in your data – and help you move past your stickiest problems. Optimising your investments, operations and outcomes. Maximising the impact of your resources towards a better future.

Our clients operate in high-stakes, highly technical and highly secure environments. The pace is fast; the demands are complex and the cost of getting decisions wrong is high. They need partners who bring clarity, precision and practical expertise — not complexity for its own sake.

Our value comes from combining deep analytical strength, applied technology expertise and hands-on consulting experience. We turn ambiguity into clarity and insight into action.

What We Offer

We operate at the cutting edge of digital innovation and at the heart of organisations that keep vital infrastructure running, national security protected, and armed forces prepared. Our teams provide:

Decision advantage

We give organisations the insight to act with clarity and pace, ensuring choices made today hold up under tomorrow's pressure.

Our strength comes from being data-led, operationally aware and grounded in real-world context. We explore options, test scenarios and highlight trade-offs before action is taken, building confidence in complex and high-consequence environments.

Technology that works

We help organisations unlock the full value of their technology and existing investments. Our solutions are shaped to our clients' environments — secure, scalable and designed for reuse — delivering faster outcomes and greater value for money.

We stay user-driven, not technology-driven, ensuring what we build is usable, dependable and impactful.

Delivery impact

We work shoulder-to-shoulder with clients to turn ambition into results. Our approach is collaborative, adaptive and focused on rapid progress.

We build momentum early, provide clear answers before the conversation moves on and ensure delivery stays aligned to purpose. Whether defining strategy or supporting implementation, we bring clarity, structure and practical leadership.

Strength in secure and complex environments

All our work is delivered by security-cleared teams who understand the realities of Defence, national security and critical infrastructure.

We design and assure solutions that are resilient, secure and governed — engineered to work in environments where constraints are real and reliability matters.

Powered by BAE Systems Digital Intelligence

We combine the pace, creativity and agility of a specialist consultancy with the depth, reach and security of BAE Systems.

Clients benefit from a unique blend of niche expertise and enterprise-scale capability, with seamless access to Digital Intelligence, engineering, cyber and equipment programmes when required.

Service Overview

Techmodal has 20 years' experience of developing software solutions to address our clients' business challenges.

We work with our customers to design, develop, test, and deploy robust, scalable, and user-friendly software applications, using a variety of proven technologies, helping our customers to derive maximum value from their data and make better decisions. Our applications are deployable on-premises and into a variety of cloud environments, including Amazon Web Services (AWS), Microsoft Azure, Oracle Cloud Infrastructure (OCI), MODCloud, and the Defence Data Analytics Platform (DDAP).

Our delivery methodology is Agile, ISO9001-compliant and follows the Government Digital Services (GDS) framework. We work collaboratively with our clients to deliver projects at the full range of maturity and Technical Readiness Level (TRL), from data discovery and strategy to capability demonstrators and hosted production applications. Our application development service focuses on iteration and responsiveness. We address initial requirements and flexibly accommodate changes during the development process.

We have proven experience of handling data sets in a wide range of formats and at various degrees of scale, quality, complexity, and maturity to reduce manual effort, produce sustainable insights and develop decision support tools.

Our application development specialists have proven experience across a variety of technology stacks, tools and programming languages, including Azure, AWS, OCI, SQL databases, NoSQL (e.g. MongoDB), PostgreSQL, Databricks, Azure Data Factory, data streaming technologies (e.g. Kafka, PySpark), Apache Airflow, React, Oracle Application Express (APEX), Python, TypeScript, JavaScript, NodeJS, and more. We are experienced in both DevOps and DevSecOps approaches and tooling (including GitLab, Maven, Jenkins, Docker, Kubernetes, and Terraform).

We are vendor-agnostic and seek to exploit existing client technology investments wherever possible, to maximise pace of delivery, align to client digital strategies, and achieve greater value for money. We have a demonstrable track record of employing the latest vendor tools and open-source technologies, along with proven solution deployment credentials, utilising both cloud and on-premises infrastructure and working in secure, constrained environments.

We regularly work in secure environments and understand the need to obfuscate data or generate synthetic data to support application development and testing. We have developed our own reusable toolset to mask sensitive data, giving us the ability to build out applications on representative data securely. Our toolset can also be used to extrapolate large volumes of representative data from a small initial data set. This generates usable synthetic data in sufficient volume to aid development of appropriately scaled solutions.

Our approach is as follows:

Understanding Your Requirements (Discovery)

We begin with an exploratory discovery phase where we ask every question we can of both the user community and the data. We assess user needs, build a clear understanding of business challenges, context and constraints and capture user stories to inform future phases.

We engage with key stakeholders to define User Stories to understand the goals of the application and how it will be used. User Stories are simple, plain English descriptions of the functionality an end user needs to fulfil their role.

We build a clear picture of requirements, with the level of detail increasing over time. We ensure these Business and User Requirements are Explicit, Concise, Objective, Measurable, Agreed, and Testable. We use the MoSCoW (Must, Should, Could, Won't) system of prioritisation to categorise requirements. These requirements provide a framework against which the product is designed, built, and tested.

This process has been independently certified under ISO9001 as best practise for requirements management.

We also perform targeted discovery on the data sets the application will require. We apply statistical analysis to understand existing data structures and highlighting data quality issues early so we can take proactive steps to improve this over the project.

Concept Creation (Alpha)

In Alpha, we focus on applying outputs and learnings from Discovery and developing a capability demonstration. This Alpha phase includes experimentation and testing to ensure any solution we develop is fit for purpose and meets business needs. Extensive feedback and thorough automated testing (including CI/CD validation & Unit Testing) are central to our development approach. As firm believers in ethical development practices, we ensure that any models, rules, and algorithms that underpin our software applications are explainable; our clients understand how any outputs are determined, bringing confidence in the work we deliver.

Concept Validation (Beta)

Our Beta phase takes the concepts developed in Alpha and ensures they work in a representative operational environment. This includes extensive user testing and feedback as we iteratively develop and improve our offering throughout a project. This ensures the final product is delivering against the user stories and benefits identified in Discovery.

A focus on quality and sustainability is core to our software delivery approach and our testers play a pivotal role in solution delivery, working closely with end users and developers throughout the project lifecycle. Our functional testing is driven by the User Stories defined in collaboration with key stakeholders, ensuring that testing is informed by business context. User Story testing is supported by other techniques such as negative testing, User Interface & User Experience (UI & UX) testing, numerical testing, and regression testing to ensure comprehensive coverage.

Applications are stress-tested during development and deployment to ensure the solution scales to meet both current demands and future growth without the need for extensive redevelopment work.

Production Applications (Live) & Ongoing Support

In the Live phase we focus on deploying the application onto relevant infrastructure (on-premises or cloud) and integrating to all relevant data feeds. Continuous Integration/Continuous Deployment (CI/CD) pipelines are implemented to automate deployment and Automation Testing (AT) processes. We also integrate the solution with upstream data sources and downstream systems that use the insights, while retaining the ability to iterate the application against emerging requirements to further ensure scalability and sustainability. We provide our clients with clear, concise technical documentation and well-written, formatted, and commented code.

We ensure all calculations and assumptions are validated and satisfactory to the client. This is combined with working to influence the cultural attitudes our clients have towards their data, such as unawareness of the full value of their data until tangible insights have been generated.

By working with our clients to establish a chain of consequence from data source to output, we demonstrate the potential their data holds. We enable them to recognise other business problems that might benefit from similar solutions. This creates a positive feedback loop on improvements in data quality and outputs, essential to a sustainable solution.

Techmodal also offers ongoing end user and application support, training and upskilling. This includes online Service Desk (with full issue resolution workflow), floorplate support, bespoke training offerings and documentation.

Flexible Deployment and Hosting

We work with our customers' existing technology stacks wherever possible to maximise the pace of delivery, align with wider digital and data strategies and derive maximum value from existing investments. To support this, we are experts in using a range of COTS and open-source tools and platforms, ensuring we can bring the most effective solution to our customer's challenges.

Techmodal has repeated experience of developing and deploying data science and analytics solutions on customer platforms, including on-premises infrastructure and cloud environments such as Amazon Web Service (AWS), Microsoft Azure, Oracle Cloud Infrastructure (OCI) and Google Cloud Platform (GCP). Our work spans different classification levels and we have experience of MODCloud (AWS, Azure and Palantir Foundry), Army Hosting Environment (AHE) and Navy Digital environments.

Service Features

- End-to-end discovery and development, from strategy to deployment
- User research
- User Interface/User Experience (UI/UX) design and development
- Processing of structured, semi-structured & unstructured data
- Application deployment via DevOps or DevSecOps pipelines
- Agile Methodologies
- Continuous Integration/Continuous Deployment (CI/CD)
- Manual & Automation Testing
- Automated data pipelines
- Combining disparate data sources
- Database management & tuning
- Technical consulting
- Data obfuscation and synthetic data generation
- Ethical development practices
- Enduring solution support

Service Benefits

- Scalable solutions, either on-premises or cloud
- Flexible infrastructure and hosting options
- Proven approaches and architectures
- Vendor agnostic and experienced in open-source software
- Greater utility from existing data
- Enhanced business decisions
- Business insight through powerful data visualisation
- Better awareness of critical information
- Strong track record of deploying solutions in secure environments
- Rapid access to data to enable data driven decisions
- Improved data quality
- Infrastructure to enable predictive and prescriptive diagnostics
- Managing security & compliance
- Single source of truth
- Transformation enablement
- Enabling delivery of strategic objectives

End of document

Contact: John Atkins
tenders@techmodal.com