

ROKE



Information Advantage

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Service Definition

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TABLE OF CONTENTS

Information Advantage – Service Definition1

Service Offering1

Detailed Service Definition.....1

 Enterprise Architecture1

 Business Analysis2

 Data Engineering2

 Analytics2

 Information Resilience and Cyber Assurance2

 Cloud Architecture Design and Development2

Key Services.....3

 Enterprise Architecture3

 Business Analysis3

 Data Engineering3

 Analytics3

 Information Resilience and Cyber Assurance3

 Cloud Architecture Design and Development3

Information Advantage – Service Definition

Benefit from increased information advantage to understand the behaviours of allies, audiences, and adversaries while improving your own information resilience. Security cleared information systems architecture, data science, cyber security, and human science experts provide consultancy, design, development, and operational support tailored to your requirements.

Roke provides a full-lifecycle service for realising operational insights and information advantage in complex data environments. We combine enterprise architecture and business analysis with an understanding of human factors and deep technical expertise in all forms of data and how to capture, analyse and exploit it for operational benefit.

We support clients in maximising the potential of their digital assets across on-premises, private, hybrid and public cloud environments. Roke supports the entire lifecycle, ranging from data analytics and information denial to behavioural evaluations and Agile Command, Control and Communications (C3). This, alongside their structured analysis approach, enables auditable assessment of physical and virtual effects and cognitive outcomes.

Service Offering

- Enterprise Architecture
- Business Analysis
- Data Engineering
- Analytics
- Information Resilience and Cyber Assurance
- Cloud Architecture Design and Development

Roke's expertise in enterprise architecture, business analysis, data science, cyber security, and human sciences allows us to effectively analyse and manage the information environment to provide information advantage. This is performed

through the capture and storage of relevant information, which is subsequently fused and processed to provide insight. Information denial services and understanding of adversarial information also enables an advantage. This is supported by Roke's capabilities in software engineering and system architecture for creating secure, reliable, and efficient workflows for end users.

Detailed Service Definition

Enterprise Architecture

Our enterprise architecture team has a proven ability to conduct digital transformation across the most demanding Communications and Information Systems (CIS) requirements. Most recently Roke has demonstrated this in our support of the UK MOD's LE TacCIS and LandISTAR programmes. We bring coherence to complex information environments through experienced architects who can visualise and make sense of enterprise-level systems of systems.

Roke is involved across government in understanding the latest technology trends and its application allowing the identification of opportunities to introduce emerging technology through our evolutionary capability development process. This approach is underpinned by our understanding of Operational Service Management (OSM), enabling the configuration and release of system updates.

Business Analysis

Roke believes a key success factor in deploying CIS solutions is to apply a User-Centric Design philosophy placing the user at the heart of the design and development process. This approach is reinforced through clear workshop facilitation and Business Process Modelling ensuring all stakeholders understand the intent of the project.

Data Engineering

Roke has a dedicated team of data engineers, architects, and analysts to provide bespoke, data-driven solutions. We design and implement secure data lakes for storing large quantities of varied data, fusing together multiple sources, and providing insights through bespoke analytics and dashboards. Systems are developed with security in mind, providing monitoring and auditing capability to manage access and authentication as well as optimising cost and performance. Roke has experience with a range of data storage solutions and utilise open-source technologies that best suit the situation, often combining multiple sources to gain insights across a domain. We further fuse and enrich existing data sources with open-source information to provide a richer insight across a domain as opposed to isolated analytics. By effectively fusing data sources to provide the wider view, we deliver a single view to analysts for rapid triage and insight.

Analytics

We work closely with clients to understand their required insights, designing bespoke algorithms, transformation pipelines, and visualisations. Roke has built solutions that include dashboards for exploring and visualising metadata, creating dashboards and developing capability for end users to

make their own visualisations through easy-to-use, open-source technologies. Our experts in user experience also ensure a dynamic and appropriate workflow for users as they navigate applications and visualisations. Our data science experts provide a number of analytics covering a range of capabilities including computer vision, natural language processing, statistics, geo-based analysis, acoustic processing, and anomaly detection. We use a range of methods for data analysis from deep neural networks to big data processing technologies utilising frameworks such as MapReduce.

Information Resilience and Cyber Assurance

Roke's experts in cyber security work with clients from requirements engineering and workshop facilitation to designing and developing evidence-driven experiments and providing customised training and education. We have a deep understanding of cyber and electromagnetic activities technology as well as enhancing information denial. Experts in human science and behaviour enhance this capability by analysing and understanding influence, both of allies and threat actors.

Cloud Architecture Design and Development

Roke has designed and developed several bespoke cloud applications and provided these as managed services. Roke's certified cloud engineers provide advice and consultancy on best practice for security, cost effectiveness, and performance. We have a history of developing big data architectures using open-source technologies, exploring which options are ideal given their strengths and weaknesses, as well as the opportunities and threats associated. Roke can provide solutions to integrate with existing architectures to be managed by clients or provide managed

services. By working closely with clients, Roke can rapidly design and integrate new features to managed services and adapt as client needs change. Roke is familiar with a number of cloud-based architecture patterns such as the landing zone pattern and has deployed serverless solutions as well as platforms that take advantage of IaaS, PaaS, and SaaS offerings. Our security experts also provide insights to the shared responsibility model, carefully considering where the cloud provider, Roke, and the client are responsible for security in cloud deployments.

Key Services

Enterprise Architecture

- TOGAF certified architects
- Complex information systems modelling
- Operational Service Management optimisation
- Technology Road mapping and Horizon Scanning
- Requirements elicitation
- Design and openness assurance

Business Analysis

- Programme and procurement strategy advice
- Business Process Modelling
- User-Centric Design
- Workshop facilitation and stakeholder management

Data Engineering

- Gaining insights from complex data environments
- Maximising the potential of digital assets across a variety of data sources
- Data capture, transformation, and storage
- Data lifecycle management
- Metadata and data provenance management
- Data fusion

Analytics

- Behavioural analytics
- Stream and batch data processing
- Artificial Intelligence and Machine Learning
- Quantitative and qualitative evaluations

Information Resilience and Cyber Assurance

- Risk management
- Information assurance
- Secure development
- Security architecture
- Information denial

Cloud Architecture Design and Development

- Bespoke software engineering
- Design and implementation of cloud platforms
- Workshop facilitation and requirements gathering
- Reduced risk of vendor lock-in through independent design



Pioneering Technology for Global Security & Future Warfare

At Roke, we stand at the forefront of defence and security, delivering cutting-edge intelligence and engineering solutions that protect nations, troops, borders, critical national infrastructure and businesses. We bring the credibility of a long-standing defence and security leader, the precision of a specialist, and the agility to solve complex, high-stakes challenges with purpose and impact.

Roke is at the forefront of shaping the future of digital defence, intelligence, and national security.

We are Roke. We are Changing Worlds.

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