

ROKE



Data Engineering and Analytics

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Service Definition

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TABLE OF CONTENTS

Data Engineering and Analytics – Service Definition.....	1
Service Offering	1
Detailed Service Definition.....	1
Data Discovery & Strategy.....	1
Platform & Systems Architecture	1
Data Engineering & Architecture	2
Data Ingest, Processing & Enrichment	2
Advanced Data Analytics & Visualisation	2
Key Services.....	2
Platform & Systems Architecture	2
Data Engineering & Architecture	3
Data Ingest, Processing & Enrichment	3
Advanced Data Analytics & Visualisation	3

Data Engineering and Analytics – Service Definition

Unlock value from your data with modern, scalable, and cost-optimised analytics platforms designed around your goals. Roke delivers end-to-end data engineering, analytics, AI, and platform services built on deep expertise in cloud-native architectures, machine learning, security engineering, and modern data platform technologies. We provide independent, vendor-agnostic guidance and implementation, ensuring flexibility, performance, and long-term maintainability. Our platforms are interoperable, extensible, cloud-optimised, and ready to support a data-driven future.

Roke offers discovery, strategy, architecture, and delivery of modern data platforms based on DataOps, MLOps, and cloud-native engineering principles. This includes technology selection across data platforms, semantic layers, data fusion and enrichment services, analytics, machine learning, and AI-driven insights.

We specialise in Agile, full-stack delivery across cloud, hybrid and on-prem environments, including the transition to managed service models for a range of cloud deployment models, and support for managed services.

Service Offering

- Data Discovery & Strategy
- Platform & Systems Architecture
- Data Engineering & Architecture
- Data Ingest, Processing & Enrichment
- Advanced Data Analytics & Visualisation

Roke provides support across the full lifecycle – from strategy and roadmap through design, delivery, continuous improvement, support, and maintenance. Our solutions embrace Agile CI/CD, automated testing, Infrastructure as Code, DataOps, and MLOps to deliver incremental, high-quality value.

With expertise across data architecture, analytics, machine learning, and visualisation, Roke delivers scalable solutions for ingesting, storing, processing, analysing, and visualising data. Whether you need a complete platform or modular capabilities that plug into existing environments, we can provide it – supported by our managed service offering.

Detailed Service Definition

Data Discovery & Strategy

Roke enables organisations to unlock the full potential of their data by identifying what exists, assessing its quality and accessibility, and highlighting immediate value opportunities. Working closely with stakeholders, we shape a clear and actionable data strategy that aligns with business priorities.

This includes:

- Defining high-value, business-aligned use cases
- Assessing current data and analytics maturity
- Shaping operating models such as DataOps and MLOps
- Establishing modern architectural principles (cloud, hybrid, data lake, data mesh)

We provide a pragmatic, prioritised roadmap that accelerates data maturity and rapidly translates insight into measurable value.

Platform & Systems Architecture

Our certified cloud and platform engineers design secure, scalable, and cost-optimised architectures that deliver reliability, performance, and long-term value.

We have a strong track-record of delivering cost-efficient architectures using modern, cloud-native patterns. From serverless and container platforms to big data architectures and real-time streaming, we deliver robust solutions backed by best practice and flexibility. Roke delivers solutions that integrate smoothly with existing client architectures or can be provided as fully managed services. We collaborate closely with clients to rapidly design and implement new features as requirements evolve. With deep experience across serverless, IaaS, PaaS, and SaaS architectures, we build secure, scalable cloud platforms. Our security experts ensure clear alignment to shared-responsibility models, defining where cloud providers, Roke, and clients each hold accountability.

Data Engineering & Architecture

Roke's data engineering, architecture, and analytics specialists create bespoke solutions designed for high-volume, high-variety data. We build modern data lake environments that consolidate and fuse data from multiple sources, powering advanced analytics and intuitive visualisations. Security, observability, access control, and cost optimisation are integral to every design. Leveraging a broad ecosystem of storage technologies and open-source tooling, we integrate heterogeneous datasets to deliver deeper, cross-domain insight.

Data Ingest, Processing & Enrichment

Roke designs and delivers ingestion pipelines capable of handling a broad spectrum of data formats from unstructured content and network-level data to high-volume video streams and geospatial data. We enrich and fuse these sources with open-source intelligence to create deeper, domain-wide insight rather than isolated analytics. By unifying diverse datasets into a single, coherent view, we enable analysts to perform rapid triage and make more informed decisions.

Advanced Data Analytics & Visualisation

Roke works closely with clients to define the insights they need and then designs tailored algorithms, data transformation pipelines, and visual experiences that deliver them. We build intuitive dashboards for metadata exploration, flexible domain-specific visualisations, and self-service tools that enable users to create their own insights using modern, easy-to-use technologies.

Our UX specialists ensure that every analytics workflow is seamless, efficient, and aligned with how users work.

Roke's data science team supports a broad range of analytical techniques, including computer vision, natural language processing, statistical modelling, geospatial analytics, acoustic analysis, and anomaly detection. We employ modern approaches spanning deep learning, classical machine learning, and scalable data processing frameworks to turn complex data into actionable intelligence.

Key Services

Platform & Systems Architecture

- Cloud Architecture & Engineering
- DataOps & MLOps
- Vendor-neutral design
- Independent technology evaluation
 - Data platforms
 - Data models
 - Data fusion, enrichment & analytics
 - Data visualisation
 - Machine learning algorithms

Data Engineering & Architecture

- Modern data modelling design
- Multi-modal data storage (relational, document, graph, vector)
- Data lifecycle management
- Metadata, lineage & governance

Data Ingest, Processing & Enrichment

- Data fusion & enrichment
- Real-time streaming and batch processing
- Migration of legacy datasets
- Rapid integration of new data feeds and analytic features

Advanced Data Analytics & Visualisation

- ML & AI development and consultancy (including GenAI)
- Stream & batch analytics
- Observability, auditing, and performance monitoring
- Custom analytics dashboards, semantic layers, self-service tooling



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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