



SERVICE DEFINITION DOCUMENT

*Digital Twin Design, Build &
Optimisation*

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1. Purpose of this Document

This document provides comprehensive information about Cranmore Consulting's Digital Twin Design, Build & Optimisation services and defines how these services are delivered to UK public sector organisations.

This Service Definition is required as part of Cranmore's listing on the G-Cloud 15 framework and conforms to the requirements specified in the Crown Commercial Service's guidance on service definition documents.

These services are designed for central government departments, local authorities, NHS organisations, and other public bodies seeking advanced digital twin capabilities for resource simulation, predictive planning, and optimised resource allocation.

2. Service Description

2.1 Overview

Cranmore provides full-cycle deployment of machine learning powered digital twins to simulate organisational resources and enable advanced planning with efficient resource allocation. Our proven digital twin technology leverages machine learning and artificial intelligence to ensure bespoke digital twins learn from real-world data, providing sophisticated forecasting capabilities and actionable insights.

Digital twins create virtual representations of physical assets, processes, or systems, continuously updated with real-time data to mirror their physical counterparts. Machine learning algorithms analyse patterns, predict behaviours, and identify optimisation opportunities that would be impossible to detect through traditional analysis methods.

Cranmore's digital twin implementations span diverse public sector applications including healthcare resource planning, infrastructure management, service delivery optimisation, and operational forecasting. Our approach combines deep technical expertise in ML/AI with domain knowledge of public sector operations, delivering digital twins that drive measurable improvements in efficiency, cost reduction, and service quality.

2.2 Service Components

Machine learning powered digital twin services include:

- **Digital twin strategy and assessment:** Assessment of assets, processes, or systems to identify digital twin opportunities, define objectives, and establish success measures.
- **Digital twin model development:** Creation of digital twin models using historical and, where appropriate, near real-time data to represent physical or operational systems.
- **Machine learning and adaptive models:** Application of machine learning techniques to improve model accuracy, detect patterns, and adapt to changing operational conditions.
- **Data integration:** Integration of operational, enterprise, and external data sources to support digital twin accuracy and relevance.
- **Predictive analytics and insight:** Forecasting future states and identifying potential issues to support proactive decision-making.
- **Scenario simulation:** Evaluation of alternative operational scenarios through digital twin simulation to inform intervention planning.
- **Visualisation and dashboards:** Visual representations and dashboards providing accessible insight for operational and strategic stakeholders.

- **Optimisation and decision support:** Use of optimisation techniques to explore resource allocation and performance improvement options.

2.3 Service Benefits

Organisations implementing digital twins realise transformative advantages:

- **Improved planning and forecasting:** Predictive modelling and scenario simulation support more informed operational and strategic planning.
- **Optimised resource allocation:** Evaluation of alternative scenarios supports better use of resources and operational efficiency.
- **Proactive risk identification:** Predictive insight helps identify emerging risks, bottlenecks, or failures before they impact live services.
- **Scenario simulation and validation:** Digital twin models enable assessment of “what-if” scenarios without disrupting live operations.
- **Enhanced decision-making:** Data-driven insights support evidence-based operational and investment decisions.
- **Continuous improvement:** Ongoing refinement of models based on real-world outcomes improves accuracy and long-term value.

3. Delivery Approach

3.1 Agile Implementation

Digital twin development follows Agile methodology enabling iterative development, rapid feedback, and continuous refinement:

- **Two-week sprints** – Each sprint delivers digital twin capabilities with demonstrable predictions or insights
- **Daily standups** – Brief team synchronisation ensuring model development and integration progress
- **Sprint reviews** – Stakeholder demonstrations validating digital twin accuracy and usefulness
- **Sprint retrospectives** – Team reflection on model performance and process improvements
- **Continuous validation** – Continuous validation of predictions against actual outcomes ensuring accuracy

3.2 Validation and calibration

Comprehensive validation ensures digital twin accuracy including historical data back testing, real-time prediction validation, accuracy metrics tracking, scenario simulation testing, and stakeholder verification. Digital twins continuously calibrated based on prediction accuracy and operational feedback.

3.3 Deployment and operationalisation

Digital twin deployment follows phased approach:

- Pilot deployment with limited scope validating operational readiness
- User training for digital twin interaction and insight interpretation
- Integration with operational workflows and decision processes
- Phased expansion incorporating additional assets or processes
- Hypercare with model monitoring and refinement

4. Service Constraints

To support successful digital twin outcomes:

- **Data availability:** Access to relevant historical and, where appropriate, near real-time operational data supports model accuracy. Cranmore can support data preparation and integration where required.
- **Use case focus:** Cranmore works with the Buyer to prioritise digital twin use cases based on business value, feasibility, and data readiness.
- **Stakeholder and domain input:** Ongoing Buyer engagement and access to subject matter expertise support model validation, calibration, and refinement.
- **Operational integration:** Digital twin value is maximised when insights are incorporated into Buyer decision-making and operational processes

5. Ongoing Support

5.1 Support Services

Cranmore provides comprehensive AI solution support:

- **Technical Account Manager** – Single point of contact for relationship management and guidance
- **Support Desk** – Enhanced support models, including extended-hours or 24/7 support, may be available where agreed as part of the call-off
- **Email and Ticketing** – Incidents raised via Atlassian helpdesk with 2-5 hour response (5 days/week)
- **Web Chat Support** – Available 9am-5pm UK time, Monday-Friday at additional cost
- **Model Monitoring** – Continuous model monitoring and performance tracking
- **ITIL Service Management** – Professional incident, problem, and change management

5.2 Support Response Levels

Incident response based on business impact:

- **Priority 1 (Major Impact):** 15 minutes response, 6 hours resolution target
- **Priority 2 (High Impact):** 1 hour response, 8 hours (one working day) resolution target
- **Priority 3 (Moderate Impact):** 4 hours response, 3 working days resolution target
- **Priority 4 (Minor Impact):** 1 day response, 10 working days resolution target

6. Security and Compliance

6.1 Security Accreditations

Cranmore maintains:

- **ISO 27001** – International standard for information security management
- **Cyber Essentials Plus** – Independently verified cyber security controls
- **Security Clearance (SC)** – Key personnel hold UK Security Check clearance enabling work with OFFICIAL and OFFICIAL-SENSITIVE data

6.2 Digital twin security

All digital twin implementations comply with data protection and security requirements including encrypted data transmission and storage, access controls, audit logging, model security protecting intellectual property, and compliance with UK GDPR and sector-specific regulations.

7. Pricing

Digital twin services priced based on project scope and complexity:

- **Discovery:** Typically delivered on a fixed-price basis, agreed in advance based on the defined Discovery scope and timebox.
- **Implementation:** Priced separately based on the agreed delivery scope and approach, following Discovery or as a standalone engagement.
- **Optional support and enhancements:** Time and Materials pricing may be used for agreed support activities or model enhancements, where appropriate.
- **Payment terms:** Payment terms are 30 days from invoice date. Invoicing arrangements are agreed as part of the call-off.

See pricing documents for more information.

8. Contact Information

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G-Cloud 14 Listing

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