Smart City Operating Model Training Course: Platforms, Utilities Data and Service Performance

31 January – 11 February 2027
Muscat

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Programme Summary

Smart city operating model design is the subject of this two-week training course for municipal and utility directors, city programme managers and infrastructure and digital leads, ending in a smart city operating model pack for one district. Cities buy sensors, platforms and control rooms project by project, so data, responsibilities and supplier duties stay fragmented. The programme moves from operating model foundations to assets and sensors, city data platforms, operations centres, utilities and mobility services, security, contracts and measured results. Mars Training Centre UK delivers this programme on the smart city operating model to mixed-organisation cohorts.

The Business Case

Cities, utilities, ports and large estates now run roads, water, lighting, waste and public space with connected devices. When each service buys its own system, control rooms see fragments, suppliers answer to nobody in particular and residents meet separate processes for linked problems. Leaders who agree one operating model can decide who owns data, who responds to events and what each supplier must deliver.

- Service Response Time: Shortens when events reach one team with agreed priorities and escalation.
- Utility Loss and Energy Cost: Falls when monitoring data is used by named owners to act early.
- Supplier Performance: Improves when contracts carry measurable service levels and data return terms.

Principles and Evidence Base

- ISO 37106: Provides guidance on establishing smart city operating models for sustainable communities, applied in Sessions 1 and 10 to the operating model pack.
- ITU U4SSC Reference Framework: Sets out integrated management of a smart sustainable city, applied in Session 3 to map platform functions.
- Layered City Platform: Links sensing, networks, data and applications to city services, applied in Sessions 2 to 4 to design the data path.
- Service Levels: Define measurable supplier duties, applied in Sessions 8 and 9 to contracts and performance reporting.

Intended Participants

- Municipal and utility directors who set accountability for connected infrastructure services.
- City programme managers who coordinate suppliers, pilots and rollouts across agencies.
- Infrastructure and digital leads who specify sensors, networks and data platforms.
- Operations managers who run control rooms and field response for city services.
- Procurement and contract leads who write and manage technology service contracts.

Typical settings include city administrations, water and energy utilities, transport authorities and large property developments.

Learning Outcomes

1. Participants will be able to construct a smart city operating model with roles, services and decision rights.
2. Participants will be able to evaluate sensor, network and platform choices against data quality needs.
3. Participants will be able to design an integrated operations centre concept with event priorities and escalation.
4. Participants will be able to prioritise utility and mobility use cases by benefit and privacy risk.
5. Participants will be able to diagnose security, resilience and supplier dependence in connected assets.
6. Participants will be able to justify a district operating model and its measures to city leaders.

Programme Structure

Day 1: Smart City Operating Model Foundations

Who runs the connected city, and under what rules?

- Smart City Operating Model Canvas
- ISO 37106 Operating Model Elements
- Service Catalogue Draft
- Roles and Decision Rights Table
- Maturity Self-Assessment Sheet

Day 2: Infrastructure Assets, Sensors and Connectivity

Which assets need sensing, and how do the readings reach the platform?

- Asset and Sensor Inventory
- Sensor Selection Matrix
- Network Connectivity Options Table
- Field Device Maintenance Plan
- Data Quality Rules

Day 3: City Data Platforms and Interoperability

How does data from separate systems become one usable picture?

- Layered City Platform Model
- U4SSC Reference Framework Mapping
- Data Model and Standards Register
- Interface Specification Sheet
- Data Ownership and Sharing Agreement

Day 4: Integrated Operations Centre Design

What must a control room see, and who acts on it?

- Integrated Operations Centre Concept
- Event and Alarm Priority Scheme
- Cross-Agency Escalation Protocol
- Shift Staffing Model
- Operations Dashboard Layout

Day 5: Smart Utilities: Water, Energy, Lighting and Waste

Where does connected monitoring cut loss and cost in utilities?

- Leakage and Pressure Monitoring Case
- Smart Metering Data Use Review
- Street Lighting Control Rules
- Waste Collection Route Optimisation
- Utility Savings Tracking Sheet

Day 6: Mobility Data and Public Space Services

How is movement data used without harming privacy or service?

- Traffic and Transit Data Feeds Map
- Parking and Kerbside Data Use Case
- Public Space Occupancy Counting
- Incident Response Playbook
- Data Minimisation Checklist

Day 7: Cybersecurity, Privacy and Resilience

What protects connected infrastructure from attack, failure and misuse?

- Connected Asset Threat Register
- Privacy Impact Screening Form
- Access Control and Segmentation Plan
- Outage Recovery Runbook
- Supplier Security Requirements List

Day 8: Suppliers, Contracts and Service Levels

How do contracts keep suppliers accountable for results?

- Service Level Agreement Template
- Supplier Performance Scorecard
- Contract Exit and Data Return Clauses
- Pilot-to-Scale Decision Gate
- Vendor Lock-In Risk Review

Day 9: Benefits, Performance and Citizen Services

How are results measured and shown to residents and leaders?

- Benefits Register
- Service Performance Indicator Set
- Citizen Request Handling Flow
- Resident Feedback Loop
- Quarterly Performance Report Outline

Day 10: Smart City Operating Model for One District

Do the earlier tools join into a model that city leaders can approve?

- Applying the Session 2 Asset and Sensor Inventory
- Testing the Session 3 Data Ownership Agreement
- Checking the Session 4 Alarm Priority Scheme
- Reading the Session 8 Service Level Template
- Completing the District Smart City Operating Model Pack

Methodology

The programme uses case analysis built on prepared material for two settings, a coastal city district with mixed utilities and a transport hub with a shared control room. Participants inventory assets, trace a data path, draft service levels and defend their operating model to peers acting as city leaders and suppliers, with exercises resumed on a second district for comparison.

- Suggested activity: Tracing one water leak alert from sensor to repair crew and marking each handover.

- Suggested activity: Rewriting a supplier contract clause so that unused data returns to the city.
- Suggested activity: Ranking six use cases by benefit, cost and privacy exposure.

Capstone Output

Each participant completes a smart city operating model pack for one district. It holds a service catalogue, an asset and data map, an operations centre concept, security and privacy rules, service level terms and a benefits register. At work it supports a leadership decision, a procurement brief and the first year of delivery.

Frequently Asked Questions

Is smart city operating model training suitable for leaders who do not have a technical background?

Yes. The smart city operating model is taught through prepared cases and templates. The programme assumes responsibility for city services, infrastructure or programmes, but no earlier experience of sensors, data platforms or technology contracts.

Which standard does the smart city operating model rest on in this programme?

The smart city operating model rests on ISO 37106 for operating models, the ITU U4SSC reference framework for integrated management, a layered city platform and measurable service levels.

How is the pack from smart city operating model training used at work?

You use the smart city operating model pack to brief city leaders, define data ownership and response duties, write supplier requirements and track benefits for a first district.

How does a smart city operating model differ from a programme on urban planning?

A smart city operating model concentrates on running connected services, data, control rooms and supplier duties, while an urban planning programme concentrates on land use, growth, housing and transport networks.