Testing AI Mapping and Title Records in Land Administration: One-Week Executive Programme

3 – 7 January 2027
Doha

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Programme Summary

This one-week programme gives land agency, survey authority and registry leaders a compact method for deciding where AI can safely help with parcel mapping and title record checking, and where it cannot. Ownership, lending and planning all depend on land records that are often old, inconsistent and slow to correct, while AI suppliers promise quick gains that are hard to verify. Across the week participants move from land data and standards to AI boundary extraction, record checking, accuracy testing and governance, working on prepared parcel maps and register extracts, and finish with a short adoption pack for one cadastre and title register. Mars Training Centre UK delivers this programme to mixed-organisation cohorts.

The Business Case

A registry that adopts AI without testing it can spread errors faster than it removes them. Leaders who can check a mapping claim against ground survey, see where their records are weakest and hold suppliers to account can modernise with far less risk to ownership data.

- Record Accuracy: Improves when every AI check is measured against surveyed parcels and each correction is logged.
- Mapping Backlog: Falls when automated extraction is limited to sources where tested accuracy justifies it.
- Boundary Disputes: Fewer arise when decision rights and boundary evidence are settled before automated results are accepted.

Principles and Evidence Base

- ISO 19152 Land Administration Domain Model: The international standard for describing parties, rights, responsibilities and spatial units, used to structure parcel and title data.
- FIG analysis of AI for cadastre: The surveyors' federation review of AI opportunities in integrated land administration, used to select and limit use cases.
- Precision and recall: The statistical measures for judging extraction results against reference data, used to test every AI output.

Intended Participants

- Leaders who approve digitisation, mapping and registry modernisation programmes.
- Survey and cadastre managers responsible for parcel accuracy and ground control.
- Registry and title record heads who decide which records automated tools may change.
- Technology and procurement managers who buy imagery, extraction and records platforms.
- Legal and risk advisers who review boundary evidence and data protection for land records.

Typical settings include land registries, survey departments, municipal planning bodies and property finance.

Learning Outcomes

1. Participants will be able to assess land and survey data for completeness, positional quality and suitability for AI use.
2. Participants will be able to compare AI boundary extraction and record checking approaches by precision, recall and cost.
3. Participants will be able to build an accuracy test plan that uses ground survey as its reference.
4. Participants will be able to rank records and map sheets for automated treatment by risk and value.
5. Participants will be able to challenge weak supplier claims and identify data protection gaps in AI platforms.
6. Participants will be able to present a concise adoption pack to a land authority board.

Programme Structure

Day 1: Land Data and AI Foundations

Which land administration decisions can AI realistically support?

- Inventory of Land Administration Decisions
- Mapping the Parcel and Title Data Landscape
- ISO 19152 in Plain Terms
- AI Method Families for Land Records
- Long List of Candidate Use Cases

Day 2: Survey Sources and Use Case Selection

Which uses rest on data good enough to pursue?

- Reviewing Survey Plans, Imagery and Registers
- Checking Field Completeness and Positional Quality
- Reading the FIG Cadastre Opportunity Analysis
- Scoring Use Cases for Value and Risk
- Estimating the Human Review Load

Day 3: AI Boundary Extraction and Record Checking

How do AI tools find boundaries and spot faults in records?

- Comparing Boundary Extraction Methods
- Designing Training Samples
- Reading Confidence Scores Sensibly
- Rules for Matching Plans to Register Entries
- Designing an Exception Queue

Day 4: Accuracy Testing and Governance

How is an AI result proved, and who answers when it is wrong?

- Drawing a Reference Sample from Ground Survey
- Building a Precision and Recall Table
- Writing an Acceptance Threshold Memo
- Setting Decision Rights for Automated Changes
- Testing Supplier Claims and Data Protection

Day 5: Pilot Scope and Adoption Pack

Can the week's findings be joined into a pack a board can approve?

- Applying the Day 2 Use Case Shortlist
- Testing the Day 4 Acceptance Memo
- Checking the Day 4 Decision Rights Against Real Roles
- Defining a Pilot Scope and Benefit Measures
- Completing and Defending the Adoption Pack

Methodology

The programme is a hands-on data workshop using prepared parcel maps, survey plans and register extracts from an urban and a rural land office. Participants read extraction results, set test samples, question suppliers and rehearse registry decisions, then defend their pack to peers acting as a land authority board.

- Suggested activity: Scoring two boundary extraction outputs against a prepared reference set.
- Suggested activity: Drawing a reference sample and calculating precision and recall for a record check.
- Suggested activity: Putting prepared questions to a mock supplier presentation.

Capstone Output

Each participant leaves with a short adoption pack for one cadastre and title register. It contains the use case shortlist, an accuracy test plan with acceptance thresholds, a decision rights chart and a pilot scope. At work it goes to the land authority board and becomes the routine for testing later AI proposals.

Frequently Asked Questions

Do I need a surveying or data science background to attend?

No. The week uses prepared parcel maps and register samples. You need responsibility for land, survey or registry decisions, but no programming, surveying or statistics background.

How does this one-week programme differ from the two-week version?

The one-week programme concentrates on testing AI results and governing automated changes, and ends in a compact adoption pack. The two-week version adds more time on parcel modelling, record structure and operating model detail.

Which standards and measures does the programme rely on?

It relies on ISO 19152 for describing parcels, rights and parties, the FIG analysis of AI for cadastre, and precision and recall measures for testing results against reference data.

How is the adoption pack used after the programme?

You take it to your land authority board, use its accuracy test plan to judge each supplier proposal, and keep its decision rights chart as the rule for automated record changes.