



TRUST IN THE REGISTER STARTS IN THE REPOSITORY

Measuring and sustaining document repository health in
land titles registries, before AI and after it.

19%

of applications to one national
land registry needed a request for
missing or corrected information

60%

of AI projects unsupported by AI-
ready data are expected to be
abandoned

35M

historic property records at one
county office put at risk by
decaying microfilm

EXECUTIVE SUMMARY

A REGISTRY IS A PROMISE, AND THE PROMISE RESTS ON DOCUMENTS

A land titles registry is a promise. When the state registers a title, it stands behind what the register says. That promise rests on documents: the instruments, plans, caveats and supporting records that form the chain of evidence behind every parcel.

Most registries hold that evidence across decades of accumulated technology, formats and indexing practice: paper, microfilm, fiche, scanned images and born-digital filings. They are now under pressure to modernize, with faster turnaround, online services, and AI for classification, extraction and search. All of it depends on the condition of the repository underneath.

Yet few registries can state, with evidence, how complete, consistent and trustworthy their document holdings are today, or whether that condition is improving or declining.

THIS PAPER ARGUES THREE THINGS

- 1 Repository condition is the limiting factor.** It decides how far a registry can modernize, and it decides whether AI helps or harms.
- 2 Condition can be measured.** A single health score, built from KPIs the registry defines and weights, replaces opinion with evidence.
- 3 Measurement has to be continuous.** An active registry changes every working day, so a one-time assessment starts to age as soon as it is finished.

The paper then sets out how the AITS Content Tracking System (CTS) does this, with a worked example of the score, an illustrative scenario, and a description of what a Repository Health Check involves.

19%

of 4.43 million applications to the registry for England and Wales drew a requisition in 2024–25 ³

<1/3

of countries maintained land records digitally when the World Bank reported in 2018 ²

63%

of organizations lack, or are unsure they have, the data practices AI requires ⁷



A CENTURY OF EVIDENCE IN A DOZEN FORMATS

A land titles repository is unlike most enterprise content stores. Its oldest documents are still legally live. An easement registered generations ago can bind a parcel today, so nothing ages out the way a ten-year-old invoice does.

That history arrives in layers: bound registers and paper instruments; microfilm and fiche; scanned images captured in several campaigns, at different resolutions; index data keyed by hand and migrated between systems; and born-digital submissions from law firms, lenders and surveyors. Each layer has its own conventions and its own gaps.

The risks are physical as well as logical. Acetate microfilm decays. One North American county recorder found that film holding up to 35 million property records, dating from 1871 to 1959, was deteriorating beyond recovery.¹ And the global starting point is low: fewer than a third of countries maintained land records digitally in 2018.²

WHAT THIS PRODUCES IN PRACTICE

- Instruments that exist as images but carry incomplete or inconsistent index data.
- The same instrument held more than once, from different capture campaigns, with no record of which copy is authoritative.
- Images a person can read but OCR cannot.
- Links between title, parcel, instrument and plan that were implicit on paper and never made explicit in data.
- Retention and access rules applied by custom rather than by recorded policy.

None of this is unusual. It is what decades of careful work under changing technology looks like. The question is whether anyone can say how much of each there is.

35M

property records from 1871 to 1959 at risk from decaying microfilm at one county recorder¹

THE CHAIN OF EVIDENCE

Titles, parcels, instruments, owner information, registration events and supporting documents must remain understandable, traceable and accessible together.

02 / THE STAKES

WHY A REGISTRY CANNOT TREAT THIS AS HOUSEKEEPING

In a title-by-registration system the register is conclusive. Owners, lenders and courts rely on it, and the state typically backs it with an assurance or indemnity scheme. An error in the record is therefore more than an inconvenience. It is a potential liability.

THE OPERATIONAL COST IS VISIBLE

The registry for England and Wales, one of the largest and most digitized in the world, publishes its numbers. In 2024–25 it processed 4.43 million applications to change the register and sent about 815,000 requisitions, which are requests for missing or corrected information, on 19% of them. More than 320,000 of the individual points raised were avoidable errors.³

Each requisition is a document-quality failure caught at the door. The ones that are not caught go into the repository, where they stay until something depends on them.

THE INTEGRITY RISK IS REAL

The same registry prevented fraudulent applications against property worth more than £59 million in a single year.⁴ Detecting a forged or altered instrument depends on comparing a new filing against a trustworthy record of what was filed before. A registry that is unsure of its own holdings has less to compare against.

THE STANDARD IS ALREADY WRITTEN

ISO 15489, the international records management standard, says an authoritative record has four characteristics: authenticity, reliability, integrity and usability.⁵ A registry meets its mandate when it can show these hold across its holdings, not only assert that they do.

815K

requisitions sent in one year by a single national registry³

£59M

of property protected from fraudulent applications in one year⁴

AN AUTHORITATIVE
RECORD IS

Authentic: it is what it claims to be.

Reliable: its contents can be trusted.

Complete and unaltered: it has integrity.

Usable: it can be found, read and understood.

03 / AI

AI RAISES THE STAKES

Registries have good reasons to look at AI. The useful applications are concrete: document classification, information extraction, OCR and interpretation of historical records, search assistance, duplicate and anomaly detection, metadata enrichment, and comparison of amendments against the record.

Government is moving this way. Gartner predicts that by 2029, 60% of government agencies will use AI agents to automate more than half of citizen transactional interactions, up from fewer than 10% in 2025.⁶

WHAT STOPS AI IS CONSISTENT

Gartner also predicts that through 2026 organizations will abandon 60% of AI projects that are not supported by AI-ready data, and reports that 63% either lack the right data management practices for AI or are unsure whether they have them.⁷ In government specifically, a survey of 492 leaders in 14 countries found that only 26% had integrated AI across their organization, and 45% reported inadequate data infrastructure.⁸

IN A REGISTRY THE FAILURE IS SPECIFIC

- AI does not know which of two copies is authoritative.
- It will extract a party name from a poor image and present it with confidence.
- It will answer a search from a superseded instrument if nothing marks it as superseded.
- It inherits every gap in the index.

In most sectors that produces a wrong answer. In a registry it can produce a wrong answer about who owns land.

“Modernization does not begin with selecting another application. It begins with understanding the information, processes and relationships.”

60%

of AI projects without AI-ready data expected to be abandoned through 2026⁷

26%

of government organizations surveyed have integrated AI across the organization⁸

45%

of them report inadequate data infrastructure⁸



04 / DEFINITION

WHAT “HEALTHY” MEANS FOR A LAND TITLES REPOSITORY

Health is not one property. CTS evaluates a repository across eight dimensions. The table below translates each into the question a registrar would ask.

DIMENSION	THE REGISTRY QUESTION
Completeness	Does every registered instrument have its image, its index record and its supporting documents?
Metadata quality	Are instrument numbers, parcel identifiers, party names and dates present, valid and consistent across eras?
Compliance	Do holdings meet the registration statute, the registrar’s directions and records legislation?
Retention	Is each record class held for its required period, and is disposition recorded where it is permitted?
Security	Do access permissions match the sensitivity of the record and the role of the user?
Governance	Does every collection have an owner, a classification and a recorded source?
Currency	Can the current instrument be told apart from superseded, discharged or cancelled ones?
Duplication	Where the same instrument exists more than once, is the authoritative copy identified?

These are starting points. The KPIs beneath each dimension are the registry’s own, because only the registry knows which instrument types carry the most risk, which eras were captured under which rules, and which gaps its statute will not tolerate.

Most organizations never take this step. Gartner reports that 59% do not measure data quality at all.⁹ Without a measure there is no baseline, no trend, and no way to show a minister, an auditor or the public that the record is sound.



HOW THE SCORE WORKS

CTS produces a Repository Health score: a composite of component indices, each measuring one KPI. Three decisions belong to the registry.

DECISION 1

WHAT TO MEASURE

The KPIs, expressed in the registry's own terms.

DECISION 2

HOW MUCH IT MATTERS

A weight for each KPI, reflecting statutory and operational risk.

DECISION 3

WHAT IS ACCEPTABLE

A threshold for each KPI, below which an alert is raised.

The AI is trained on the registry's own repository to recognize each KPI in the content. The measuring is automated. The standard being measured against is not.

A WORKED EXAMPLE

KPI	WEIGHT	SCORE	CONTRIBUTION
Chain-of-title integrity	35%	82	28.7
Index completeness	25%	74	18.5
Image legibility for OCR	15%	68	10.2
Regulatory compliance	15%	91	13.7
Audit trail completeness	10%	88	8.8
Repository Health score	100%		79.9

Illustrative figures to show the arithmetic. They are not client data. Contribution = weight × score.

READING THE SCORE

The composite says how confident to be. The components say where to act. In this example image legibility is the lowest component, yet index completeness and chain-of-title integrity cost the composite more, because they carry more weight. Weighting directs effort to what matters most to the registry, not to what looks worst.

The same score can be produced for the whole repository or for any section of it: an era, an instrument type, or a single capture campaign.



FROM BASELINE TO CONTINUOUS ASSURANCE

A Health Check is a snapshot. An active registry is not. Instruments are registered every working day, and conversions, migrations and retention actions change the repository further. A baseline measured once starts to age as soon as it is finished.

Few organizations can watch their own content change. In a 2025 Cloud Security Alliance survey, 56% had only partial visibility into where their data is stored, only 9% reported real-time scanning, and 23% could not scan their unstructured data at all.¹⁰

STEP 1

MONITOR

Content is watched as it is added, changed, migrated, classified, retained or removed.

STEP 2

RE-SCORE

The health score is recalculated against the registry's KPIs and weights.

STEP 3

ALERT

An alert is raised whenever a KPI falls below its threshold.

STEP 4

REMEDiate

Issues are worked in order of risk. Routine fixes are automatic; judgement calls go to staff.

WHAT AN ALERT LOOKS LIKE

ILLUSTRATIVE ALERT, NOT CLIENT DATA

KPI	Index completeness
Scope	Instruments ingested in the latest batch
Threshold / measured	90 / 84
Likely cause	Parcel identifier missing on one submission type
Recommended action	Route affected instruments to indexing review; check intake validation

ASSESSMENT AND MONITORING COMPARED

	ONE-TIME ASSESSMENT	24/7 MONITORING WITH CTS
What you know	Health on the day of the scan	Health now, re-scored with each batch
New problems	Found at the next audit, if any	An alert when a KPI falls below threshold
Over time	A single baseline that ages	A trend you can report and defend



A REGISTRY WITH A LONG MEMORY

This is a composite scenario, not a client account. It describes how a Health Check and monitoring would proceed in a registry of the kind this paper describes.

A registry holds records from the bound-register era through to electronic filing. Leadership wants AI-assisted search and extraction, and asks a fair question: are our records ready? Nobody can answer with evidence.

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| 1 DEFINE | The registrar, records staff and examiners agree the KPIs, weights and thresholds. Chain-of-title integrity and index completeness weigh most. |
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| 2 BASELINE | CTS scores the whole repository and each era separately. The likely pattern: recent electronic filings score highest, mid-era scanned conversions lowest. |
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| 3 PRIORITIZE | Findings are ranked by risk, not volume. Typical items: instruments captured twice with no authoritative copy marked, and instruments with no explicit link to a parcel. |
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| 4 DECIDE | The AI pilot is scoped to the sections whose scores justify it. Remediation is aimed at the sections that would otherwise mislead it. |
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| 5 MONITOR | CTS stays on. The score is reported to leadership as a trend, and each new batch is checked as it arrives. |
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- WHAT CHANGES**
- The conversation moves from “we believe the records are in reasonable shape” to a number, a trend and a ranked list. The registry can show an auditor how it knows.

WHO IS IN THE ROOM

The registrar or delegate, records management, examiners who know the instrument types, and IT staff who know the systems of record.

WHAT IS NOT REQUIRED

A new platform, a migration, or a decision about AI. The Health Check measures what is already there.

WHAT TO EXPECT

Uneven scores. A repository built over generations will not be uniform, and the variation is the useful part.



WHAT A REPOSITORY HEALTH CHECK INVOLVES

The engagement begins with an AI Health Check: a structured assessment of an existing repository that establishes the first Repository Health baseline and identifies information and governance risks.

1 DISCOVER

Understand the repository, its content, structure, processes and operational requirements.

2 ASSESS

Score information quality, metadata, search, governance, security and AI readiness against the registry's KPIs.

3 PRIORITIZE

Identify the improvements with the greatest practical value, without assuming a platform replacement.

4 OPTIMIZE

Implement improvements and introduce automation, analytics and governed AI where they make sense.

WHAT THE REGISTRY PROVIDES

- Read access to the repository, or to representative sections of it.
- The registration and records rules the holdings must meet.
- People who know the holdings, to define the KPIs and weights.

WHAT THE REGISTRY RECEIVES

- A baseline health score, overall and by section.
- The component breakdown behind it.
- Identified information and governance risks.
- Prioritized, actionable recommendations.

WHERE IT SITS IN MODERNIZATION

AITS describes registry modernization as an eight-step pathway. The health score is not a ninth step. It runs alongside all eight and shows whether each one left the repository better than it found it.



REPOSITORY HEALTH SCORE, MEASURED CONTINUOUSLY ACROSS EVERY STEP

CTS works with any repository. The Health Check starts with the systems the registry already depends on and does not presuppose a migration.



FIND OUT WHAT YOUR REGISTER RESTS ON

A Repository Health Check gives a registry a scored baseline, the detail behind it, and a prioritized list of what to do next. CTS monitoring keeps that baseline true as the register grows.

CONTACT AITS TO BOOK A REPOSITORY HEALTH CHECK

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ABOUT AITS

Applied IT Solutions (AITS) is the deployment group of Applied IT, based in Toronto, Canada, with a global support program. Its team brings more than 100 years of combined consulting experience in enterprise information management, document and records repositories, business process improvement and technology deployment, serving government, banking, insurance and manufacturing. AITS configures commercial software to fit how information moves through an organization, so that the technology supports the process and the process does not have to work around the technology.

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