

Operate and Maintain: The Living Asset Record

Carrying verified delivery data into operations as
a continuously updated, queryable asset record.

Published by eviFile

The evidence platform behind digital construction.

Where this paper sits in the series

This is the fourth and final paper in the eviFile Progressive Assurance series, a set of guides on how to design governance into construction and infrastructure projects from day one and carry verifiable information all the way through to operations. Each paper stands on its own, but together they describe a connected approach to digital delivery.

Paper 1, The Digital Handover Blueprint, focuses on assembling a clean, audit-ready handover pack progressively rather than in a final-week scramble.

Paper 2, The Digital Governance and Assurance Framework, sets out the four-layer model that should be in place before delivery begins.

Paper 3, The Progressive Assurance Playbook, covers the practical mechanics of capturing evidence at the point of work, with templates and KPIs.

This paper, Paper 4, focuses on what happens after handover. Specifically, how the structured information captured during delivery becomes a living asset record, maintained through the operational life of the asset and ready to support the next refurbishment, renewal, or replacement cycle.

Executive Summary

Most major capital programmes treat handover as the finish line. Information is packaged up, signed off, and transferred to the asset owner. Then it stops moving. Within months, the record begins to drift out of date as maintenance activities, modifications, and condition changes happen without flowing back to the original delivery data. Within years, the once carefully assembled handover pack becomes a historical artefact rather than a working record. At the next refurbishment or renewal cycle, the asset has to be resurveyed almost from scratch.

There is a simple reason this keeps happening. The handover record is usually delivered as a PDF, a folder of documents, or a static export to the asset owner's common data environment. The format itself is the problem. A PDF cannot be queried, updated, or connected to the systems operations teams actually use day to day. Within weeks, the data captured during delivery is sitting in a place no one looks at.

A living asset record is structurally different. It is the verified delivery data preserved as a continuously updated, queryable record that flows directly into asset management, maintenance, and ERP systems. Every condition check, every maintenance activity, every modification updates the record at the moment it happens. The information captured at delivery is not frozen, but is the starting point of a record that compounds in value over time.

This paper sets out why this matters, what a living asset record actually looks like in practice, and how to begin the shift even on assets that have already been handed over. It is the fourth and final paper in the eviFile Progressive Assurance series.

1. The Problem: Data That Stops Moving

What usually happens after handover

Across the major infrastructure programmes we have worked with, the same pattern repeats. The delivery team assembles a comprehensive handover pack. The asset owner accepts it. Operations and maintenance teams take responsibility for the asset. And then, almost immediately, the carefully structured information starts to deteriorate.

Maintenance activities happen, but they are recorded in a separate system, often the asset owner's CMMS or ERP rather than against the original delivery record. Modifications are made, but the as-built information is not updated. Condition data is captured during routine inspections, but it sits in inspection reports rather than feeding back to a central asset record. Over time, the operations teams build up their own picture of the asset, gradually disconnected from the verified data that came across at handover.

The handover format is the underlying constraint. A static PDF or document set cannot easily be updated, queried, or connected to live operational systems. People do the best they can with what they have been given, which usually means re-keying the relevant bits into the systems they actually use, and treating the original handover pack as a historical reference rather than a living record.

Why this is so costly

The cost shows up in three places, none of which is visible at the moment of handover, but all of which compound over the life of the asset.

Operational inefficiency. Maintenance teams spend time searching for information that should be at their fingertips. Each time someone has to dig through documents to find an inspection record, a material specification, or a commissioning

result, that is time not spent on the work itself. Across thousands of maintenance interventions over an asset's life, this adds up to a substantial productivity cost.

Compliance risk. Regulatory and safety regimes require ongoing evidence that an asset is being operated and maintained correctly. When that evidence is scattered across systems that do not talk to each other, audits become difficult and expensive. The same kind of remediation scramble that progressive assurance is meant to prevent at handover can reappear during operations.

Lost institutional knowledge. The most expensive consequence shows up at the next refurbishment or renewal cycle. The team carrying out the work cannot rely on the original asset record, so they resurvey, re-test, and re-document what was already known. Decades of accumulated knowledge about the asset has effectively evaporated, and the renewal project starts from a position closer to a greenfield site than to a brownfield one with an established record.

The PDF problem

Handover information delivered as PDFs cannot be queried by operational systems. Maintenance teams re-key the relevant fields into ERPs, CMMS, and asset registers, introducing transcription error.

Modifications and condition changes update the operational systems but do not update the original handover record.

Within a few years, the handover pack and the operational reality of the asset have drifted significantly apart.

2. What a **Living Asset Record** Looks Like

A living asset record is the same verified delivery data, preserved in a form that operations can actually use, updated continuously, and connected directly to the systems that run the asset. It is not a different document. It is the same information held in a structurally different way.

Format: structured, not static

The single most important difference is that the asset record is structured data linked to the physical asset, not a collection of documents about it. Each piece of information, whether a test result, a material specification, a commissioning record, or an inspection report, is a structured record that can be searched, filtered, and updated independently. Documents remain part of the record where they need to (drawings, certificates, manuals), but they sit alongside the structured data rather than being the primary form.

Maintenance: updated, not frozen

A static handover record is frozen at the moment of handover. From that point on, every change to the asset happens elsewhere and the record drifts out of date. A living record is updated continuously. Every maintenance activity, condition inspection, modification, or replacement is captured against the asset record at the moment it happens, in the same structured way as the original delivery data.

Integration: connected, not parallel

A static record sits apart from the operational systems. A living record is integrated with them. Asset management platforms such as Ellipse and Maximo, ERPs, work management systems, and condition monitoring tools all draw on the same record and write back to it. The aim is one source of truth that all the operational systems share, not duplicate data sets that have to be reconciled.

Usability: queried daily, not searched occasionally

A document set is searched when someone needs something specific from it. A living record is queried as part of daily work. A maintenance engineer planning an intervention can pull up the asset's full installation, test, and modification history in seconds. A compliance lead can run a query across the asset register and see which assets are due for re-inspection. The record becomes useful, not just defensible.

Value: compounds, not depreciates

A static handover record depreciates from the moment it is signed off. A living record compounds. Every maintenance event, every condition reading, every modification adds to the asset's evidence base. At the next refurbishment, renewal, or sale, the record is not a starting point that has to be verified, it is a reliable inheritance that can be built on directly.

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How this connects to the rest of the series

The shift to a living asset record only works if the delivery data feeding it is verified and structured in the first place. Paper 1 covers the practical path to a clean handover pack assembled progressively. Paper 2 sets the governance framework that makes the data trustworthy. Paper 3 covers the on-site capture that produces the evidence. Together with this paper, they describe an unbroken thread from design to operations.

See Papers 1, 2, and 3 in this series.

3. Four Practices That **Make It Work**

A living asset record is not produced by software alone. It is produced by four connected operational practices, supported by the right tools. The table below sets them out. Each is expanded underneath.

Practice	What it means in operations
Continuous update	Every maintenance activity, inspection, condition check, and incident updates the asset record at the moment it happens, in structured form.
Connected systems	The record feeds asset management platforms (such as Ellipse and Maximo) and ERPs directly, so operations teams act on the same data engineers captured.
Performance feedback	Real performance data flows back to inform planned preventative maintenance schedules, replacement decisions, and design of future assets.
Audit and compliance ready	Compliance evidence, condition reports, and inspection records remain queryable and exportable throughout the asset's life, not just at handover.

Continuous update

The first practice is that the asset record is updated at the moment work happens, not retrospectively. A maintenance engineer completing a planned preventative maintenance task captures the activity, the findings, and the outcome against the asset record there and then, in structured form, on a mobile device. A condition inspection is recorded against the specific asset it relates to, with GPS stamping and timestamps for auditability. An incident is logged with the affected asset linked to it, so that the asset's history reflects everything that has happened to it.

This is the same principle as progressive assurance, applied to operations rather than delivery. The point is to remove the gap between when something happens and when it appears in the record. The longer that gap, the more reconstruction creeps in, and the more the record drifts from reality.

Connected systems

The second practice is that the asset record connects directly to the operational systems that already exist. Most major asset owners run dedicated asset management platforms, often Ellipse or Maximo, alongside ERPs and condition monitoring tools. The living asset record does not replace these systems. It connects to them, so the same information feeds work order generation, scheduled maintenance, performance reporting, and compliance audits without anyone having to copy data between them.

This matters because the alternative, asking operations teams to learn a new system, will fail. Operations teams already have the tools they rely on. The right approach is to make those tools work better by feeding them clean, current data from a single source of truth, not to add yet another system into the mix.

Performance feedback

The third practice is that real performance data flows back to influence what happens next. Planned preventative maintenance schedules should be informed by what condition inspections are actually finding. Replacement decisions should be informed by failure history. The design of future assets should be informed by how the current generation has performed in service. None of this is possible if the data sits in silos that do not feed back into the decisions they should be informing.

This is the dimension of operational data that most often goes underused. The information is there, but it is not flowing to the places where it could change behaviour. A living asset record makes that feedback loop possible.

Audit and compliance ready

The fourth practice is that compliance evidence remains live and queryable throughout the operational life of the asset, not just at handover. Regulators, insurers, and asset owners need ongoing proof that the asset is being operated and maintained correctly. When that evidence is captured progressively against the asset record, audits become a query rather than a scramble. The same structured capture that worked during delivery continues to work in operations.

4. Case Study: A Power Sector Asset Owner

Challenge

A power generation operator inherited a portfolio of assets where the handover information was held as PDFs, scanned documents, and folder-based document sets across multiple sites. Operations teams spent significant time searching for installation, commissioning, and inspection records during planned maintenance windows. Compliance audits routinely required weeks of preparation as evidence was pulled from disparate systems. At the most recent refurbishment of a major asset, the project team effectively resurveyed the asset because the original records could not be relied on. The cost of that resurvey ran into hundreds of thousands of pounds.

Solution

The operator implemented a living asset record approach. Existing handover documentation was migrated into structured form, with each record linked to the physical asset it described. Maintenance, inspection, and modification activities were captured progressively against the asset record using mobile tools, with the same structured discipline used during delivery on new assets.

Result

Maintenance costs per site cut by 18%.

Engineers found what they needed in seconds rather than searching across systems.

Compliance improved with 100% audit trail

Evidence digitally tracked from start to finish, with geotags to identify location, date and user.

Refurbishment planning timeline halved. The asset record supported the planning phase directly, removing the need for a full resurvey.

Scalability across the portfolio. The approach proven on the first asset is now being rolled out across the wider portfolio.

5. Getting Started

The good news is that the shift to a living asset record does not require a wholesale replacement of operational systems. It requires a clear plan to bring the right data into structured form, connect it to the systems that already exist, and then keep it current through disciplined capture during operations. The steps below work whether you are inheriting assets from a recent handover or starting from a portfolio that has been operating for years.

1. Audit the current record

Start by understanding what you actually have. Where does asset information live today? How much of it is in structured form, and how much is in PDFs or document sets? Which systems do operations teams use day to day, and how do they get the information they need? An honest audit usually reveals more fragmentation than people expect, and is the foundation for everything that follows.

2. Choose one asset class or site

Do not try to convert the entire portfolio at once. Pick one asset class, or one site, where the value of a living record is clearest. High value assets with frequent maintenance, or assets approaching refurbishment, are usually the best candidates. Prove the approach there, capture the benefits, and use the result to make the case for the next group of assets.

3. Structure the existing data

Migrate the existing handover information into structured form, linked to the physical asset. Where the original data is high quality, this is largely a matter of restructuring. Where it is patchy or unreliable, this is also the point to identify the gaps and decide how to fill them. The aim is not perfection, it is to create a starting point that can be improved through use rather than replaced wholesale.

4. Connect to operational systems

The living record should feed the systems operations teams already use. Asset management platforms, ERPs, condition monitoring tools, work management systems. The integration work is worth doing properly, because the alternative, asking teams to work in a new system, is the most common reason these initiatives fail. People use the tools they trust. The job is to make those tools work with better data, not to replace them.

5. Establish progressive capture in operations

Once the structured record exists and is connected to operational systems, the discipline that matters is keeping it current. Maintenance, inspection, modification, and incident data should be captured progressively against the asset record at the moment work happens. This is the operational equivalent of the progressive assurance described in Paper 3, applied to the maintenance phase rather than delivery. The same principles apply. Capture at source, in structured form, validated against the requirement, and made visible in real time.

Three traps to avoid

Treating it as a documentation project

The temptation is to scope this work as “convert the handover documents into structured form” and stop there. The conversion is necessary, but it is not sufficient. Without the disciplined operational capture that keeps the record current, the converted data will drift out of date as quickly as the original PDFs did. Plan for the operational practice from the start, not just the migration.

Replacing operational systems

Resist the urge to replace established asset management or maintenance systems. Operations teams know them, trust them, and rely on them. The right approach is integration, not replacement. The living asset record is the source of truth those systems draw from, not a substitute for them.

Underestimating change management

As with every other paper in this series, the determinant of success is whether the people doing the work actually use the new approach. Maintenance engineers, inspection teams, and operations leaders need to be brought along, given a route to feed back when something is not working, and supported through the transition. Continuous improvement loops matter as much in operations as they do in delivery.

6. From Handover to **Lifetime Value**

The four papers in this series describe a single unbroken thread. Governance defines what good looks like. Progressive assurance captures evidence at source. The digital handover compiles that evidence into a clean, structured record. The living asset record carries that information forward through the operational life of the asset and into the next renewal cycle.

Each step depends on the last. A clean handover is only possible if assurance has been captured progressively. Progressive assurance is only possible if governance has been defined. A living asset record is only valuable if the data it inherits is trustworthy. Done well, the model compounds. Done piecemeal, each step has to compensate for the gaps in the one before.

The opportunity is to stop treating handover as the end of the story. The verified data captured during delivery is among the most valuable assets a project produces. Treating it as the foundation of a record that continues to grow through operations is what turns a one-off transaction into a long term advantage.

Continue with the series

Paper 1: The Digital Handover Blueprint covers the practical path to a clean, audit-ready handover pack assembled progressively rather than at the end.

Paper 2: The Digital Governance and Assurance Framework sets out the four-layer model that makes the rest of the lifecycle possible.

Paper 3: The Progressive Assurance Playbook covers the operational mechanics of evidence capture at source, with templates and KPIs.

To discuss how the living asset record applies to a specific asset or portfolio, contact the eviFile team.

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