

Point of View (PoV)

SELAI™ — The AI Navigator for Industrial Reliability (pronounced “Sel-eye”)

Comprehensive Point of View - Strategic, Technical & Human Alignment

Industrial reliability is under pressure. Plants are rich in data but poor in interpretation. Knowledge is fragmented, decisions vary, and critical engineering work depends too heavily on individual expertise. Traditional digitalisation stores information but does not reason with it.

SELAI™ changes this. As an AI Navigator for Industrial Reliability, SELAI™ interprets complex engineering information and supports consistent, risk-aligned decisions at scale. This Point of View explains how SELAI™ creates a new standard for maintenance, materials and reliability engineering.

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1. Introduction. Why asset owners and plants need an AI Navigator now

Industrial plants operate within a setting defined by complexity, aging assets, labour scarcity, and the growing need for predictable, safe operations. Much of the knowledge required to run these facilities sits in thousands of pages of manuals, P&IDs, SOPs, SAP structures, engineering notes, and human memory.

Even high-performing organisations struggle with:

- ☹️ Inconsistent maintenance strategies
- ☹️ Spare-part ambiguity
- ☹️ Slow engineering processes
- ☹️ Fragmented risk reasoning
- ☹️ Dependency on individual expertise

Traditional digitalisation efforts improved information storage, but not **engineering interpretation**. Plants still rely heavily on humans to read, extract, connect and interpret information. As technical ecosystems scale in size and complexity, this model is no longer durable.

SELAI™ introduces a new paradigm: **AI-powered engineering interpretation at industrial scale**.

A Navigator that reads, understands, structures, reasons and collaborates with engineers, transforming how maintenance, turnarounds, materials and risk decisions are made.



Urgency and recognizability

Engineers and leaders will recognise familiar patterns across almost every industrial site: time wasted searching for information, meeting structures that report more than they decide, dependence on a handful of experienced individuals, and a culture where firefighting has become the norm. These are not only technical inefficiencies, they are behavioural routines that undermine continuity and performance. SELAI™ disrupts these routines by providing immediate context, insight and actionability.

2. Business Challenge. The structural problems SELAI™ is designed to solve

The challenges in industrial reliability are not symptoms; they are structural, recurring and industry-wide.

2.1 Knowledge fragmentation

Asset information is scattered across formats and systems. Engineers spend 30–60% of their time reconstructing context before they can make a decision. This leads to inconsistent maintenance and turnaround strategies, incorrect materials and reactive decision-making.

2.2 Variability in engineering outcomes

Even with strong procedures, two engineers can produce different PM routines or spare-part lists for identical assets. This variability drives cost, creates audit risk and reduces operational predictability.

2.3 Weak alignment between maintenance and risk

Criticality assessments are often poorly integrated into actual PM logic. As a result:

- ☹ High-risk assets may be under-protected
- ☹ Low-risk assets may be over-maintained
- ☹ Spare-part stocking becomes financially inefficient

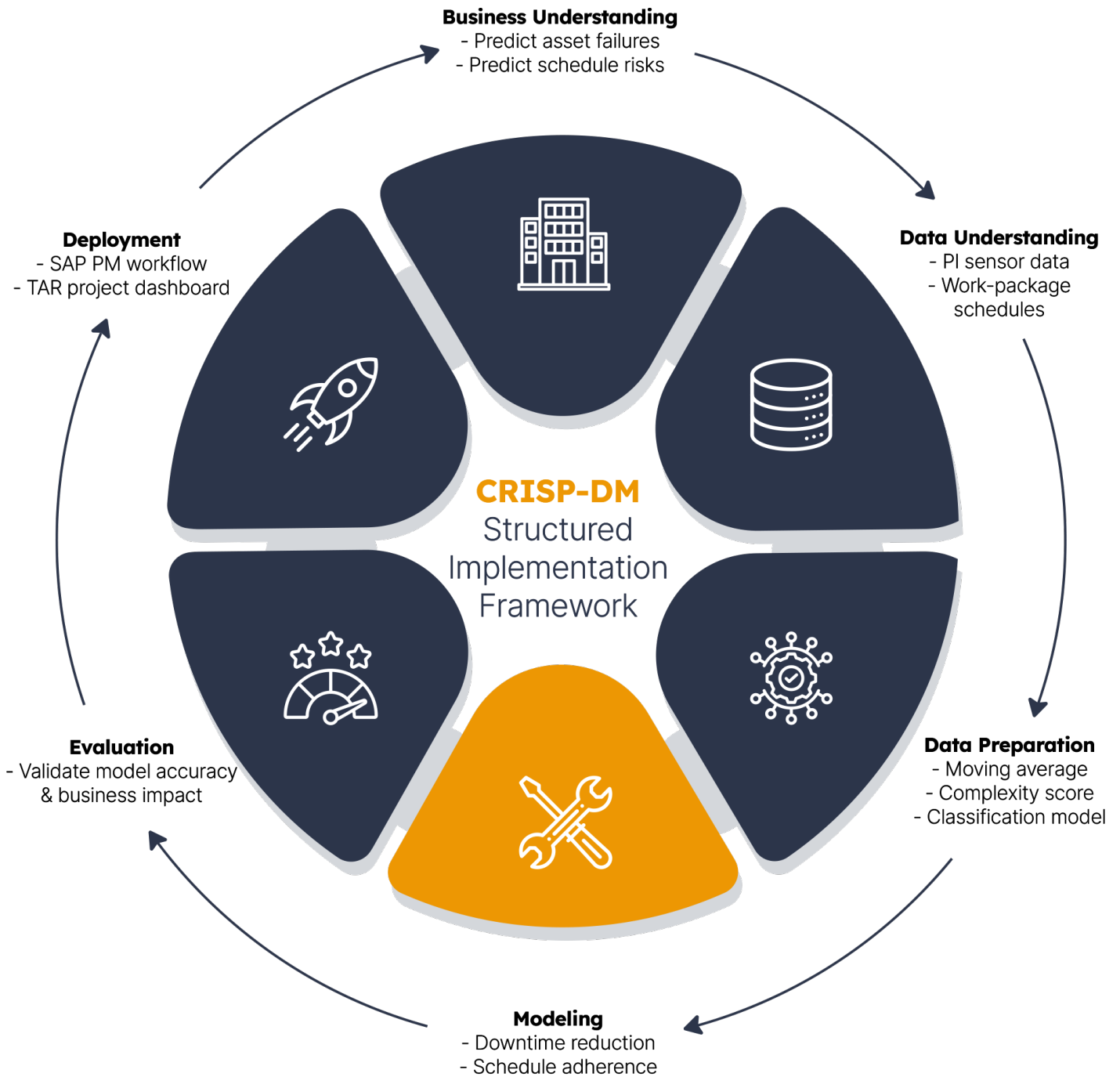
2.4 Loss of tacit knowledge

Retirements and labour scarcity accelerate the erosion of plant memory. SELAI™ provides a mechanism to capture, structure and retain engineering intelligence. SELAI™ exists to address these structural barriers — not by replacing experts, but by augmenting them with consistent, evidence-based reasoning.



Link technical issues to behaviour

Beneath these technical challenges lies a second layer: human behaviour and habits. Many decisions are shaped by routines, time pressure and incomplete information. This creates patterns such as “fix first, think later,” or repeatedly reconstructing the same analysis. SELAI™ does not only solve these issues technically by structuring information, it also creates a new standard for how decisions are made and how teams collaborate. This makes consistent engineering not only possible but logical in day-to-day work.



3. What SELAI™ Does. Turning Raw Technical Information into Actionable Intelligence

SELAI™ is built to perform a technically demanding task: Interpret complex engineering information and convert it into correct, validated, and risk-aligned decisions.

The AI Navigator processes every relevant source:

- ✓ OEM manuals
- ✓ P&IDs and engineering drawings
- ✓ SAP/Maximo hierarchies
- ✓ Spare-part catalogues
- ✓ Work-order history
- ✓ SOPs and templates

It does not read these documents superficially. It extracts tables, understands diagrams, interprets instructions, identifies components, recognizes failure modes and links them to preventive actions.

Where a human engineer may read dozens of manuals, SELAI™ reads thousands, consistently, completely, and without fatigue.



Introduction of the “action-first” concept

The result is not only better information, but faster action. Engineers no longer need to search, compare and reconstruct; SELAI™ provides an immediate, validated starting point. This shifts work away from analysing and toward doing, one of the core principles of sustainable organisational change.

4. SELAI™ Technical Architecture Overview

The architecture of SELAI™ is designed as a continuous decision-making system, built up from six interconnected layers that each perform a specific role. Together they allow the Navigator to move from raw engineering documents to accurate, validated maintenance strategies and materials intelligence. It begins with the data sources layer, where SELAI™ receives all available plant information, manuals, P&IDs, SAP structures, spare-part catalogues, and historical records. These inputs form the factual basis of the Navigator's understanding.

This information is then processed in the extraction and structuring layer, where SELAI™ reads drawings, interprets tables, and identifies equipment, components, and system boundaries. The result is a structured representation of the plant that can support deeper technical reasoning.

On top of this structure, the intelligence engines apply specialised engineering logic. They generate preventive maintenance strategies, identify and validate spare parts, assess criticality, and check for inconsistencies across sources. Each engine contributes its expertise to the evolving asset model.

The orchestrator brings these elements together. It determines which engines to activate, resolves conflicting information, and synthesizes the results into coherent and technically justified recommendations. This ensures the Navigator behaves as a unified assistant, not a collection of separate tools.

From there, the output layer converts the Navigator's decisions into operational deliverables, complete PM routines, spare-part lists, and risk profiles formatted to match plant standards and ready for SAP or Maximo.

Finally, the user interaction layer enables engineers to review, adjust, and approve the outputs through an intuitive interface. Human oversight remains central, with the Navigator providing speed, structure, and technical consistency.

Together, these six layers form a tightly integrated architecture that turns unstructured plant information into actionable engineering intelligence.

Layer 1. Data Sources: Building the Navigator's Evidence Base

Every plant begins with raw data: manuals, drawings, SAP exports, BOMs, SOPs, inspection reports and failure histories. These are not simply files, they represent the technical truth of the plant. SELAI™ ingests them all, creating a foundational dataset from which reasoning can emerge.

Layer 2. Extraction & Structuring: Understanding the Plant's Design

SELAI™ reads documents like an engineer:

- ✓ Recognising symbols in P&IDs
- ✓ Interpreting flow paths
- ✓ Extracting tags, specifications and parameters
- ✓ Identifying equipment and components
- ✓ Linking instructions to failure mechanisms
- ✓ Unstructured content becomes a structured asset model

This layer reconstructs what often only long-tenured engineers understand

Layer 3. Intelligence Engines: Applying Domain-Specific Engineering Logic

In this layer, SELAI™ becomes an engineering analyst.

- ✓ The **PM engine** translates OEM logic and failure modes into preventive tasks and intervals.
- ✓ The **materials engine** identifies spare parts, detects duplicates and maps them to SAP materials.
- ✓ The **risk engine** assigns criticality and aligns maintenance actions with asset importance.
- ✓ The **quality engine** detects inconsistencies and gaps.

Each engine represents a concentrated form of reliability engineering knowledge.

Layer 4. Orchestrator: Synthesising Insights into Coherent Decisions

This is the Navigator's reasoning centre. It selects the relevant evidence, reconciles conflicting inputs and constructs a unified recommendation. It explains its choices and shows the underlying sources, creating transparency and trust.

The orchestrator ensures that SELAI™ behaves as one intelligent partner, not as a set of disconnected algorithms.

Layer 5. Output Layer: Delivering Ready-to-Use Engineering Content

The Navigator converts its reasoning into operational outputs:

- ✓ Complete PM routines
- ✓ Structured spare-part lists
- ✓ SAP/Maximo templates
- ✓ Criticality profiles and FMEA-like reasoning

These outputs are traceable, audit-ready and consistent across assets, teams and sites.

Layer 6. User Interaction: Human-AI Collaboration in Daily Work

Engineers communicate with SELAI™ in natural language and structured review panels. They can challenge, refine or approve recommendations, keeping control and ensuring that local expertise is honoured. SELAI™ learns from this feedback, improving with every implementation cycle. This layer ensures that AI becomes a partner, not an authority.



User Interaction, emphasising routines + leadership.

This architecture supports not only technical decision-making but also behavioural consistency. Because SELAI™ applies the same logic, the same reasoning and the same quality checks every time, new routines naturally strengthen. Leaders play a crucial role: by demonstrating how they use the Navigator, asking for evidence-based reasoning and making decisions transparently, they accelerate and reinforce the new way of working.

5. The End-to-End Workflow. How SELAI™ Operates in Practice

The workflow of SELAI™ follows a clear path: it begins with raw engineering documents and ends with operational maintenance content ready for SAP or Maximo. Each step progresses naturally into the next, gradually transforming information into actionable intelligence.

SELAI™ starts by ingesting manuals, P&IDs, and asset data, interpreting their content rather than simply storing them. It recognises equipment, extracts specifications, and identifies relationships between components. From this, the Navigator constructs an internal model of the plant, a structured view of assets and systems that reflects how they function in reality.

With the plant model in place, SELAI™ moves into generating maintenance strategies. It interprets OEM guidelines, derives failure behaviours, and proposes preventive tasks and intervals that align with engineering logic and plant standards.

In parallel, the Navigator identifies spare parts mentioned in documents and maps them to existing SAP materials, resolving duplicates and highlighting missing items.

Before finalising its outputs, SELAI™ evaluates each asset's criticality. It considers failure consequences, historical behaviour, and operational dependencies, and checks whether the proposed PM actions and spare-part selections fit the asset's risk profile. This ensures that maintenance and materials are proportionate to the asset's importance.

Finally, the Navigator translates its reasoning into clean deliverables: structured PM routines, validated spare-part lists, and risk profiles prepared in the precise templates required by the plant's systems. Engineers can review and adjust these outputs before uploading them directly into SAP or Maximo.

The workflow mirrors the logic of human reliability engineering, but with far greater scale, precision and consistency.



1. Ingestion

Documents enter SELAI™ and are immediately analysed.



2. Asset modelling

The system reconstructs equipment hierarchies, relationships and behaviours.



3. Maintenance strategy generation

PM tasks and intervals are derived from manuals, standards and failure logic.



4. Spare-part identification

Components are mapped to SAP materials; gaps and duplicates emerge automatically.



5. Risk alignment

PM logic and material decisions are adjusted to match criticality.



6. SAP integration

Outputs are formatted for upload and become part of daily operations. Every cycle strengthens engineering consistency and reduces manual workload.



How SELAI™ Operates in Practice

This workflow aligns with a key principle of effective transformation: make the desired behaviour easy, visible and repeatable. Because SELAI™ consistently applies the same logic, identifies the same connections and highlights the same gaps, a new standard emerges for how engineers analyse, decide and document. Whereas traditional change depends heavily on convincing people, SELAI™ makes change visible by enabling action.

6. Engineering Benefits. How the Navigator Improves Technical Quality

The introduction of SELAI™ into a plant changes the way technical work is performed. The most direct impact is that engineering decisions become more complete and more consistent. Instead of relying on fragmented documents or individual interpretation, the Navigator bases its recommendations on a full reading of manuals, drawings, histories, and templates. This instantly raises the technical accuracy of maintenance strategies and material decisions. The second benefit is speed. Tasks that normally require long hours of document review and manual comparison are completed within minutes. Engineers spend less time reconstructing information and more time validating, improving, and applying it.

The Navigator shifts engineering work from preparation to actual engineering. Risk also becomes more manageable. Because aligns preventive actions and spare-part logic with the actual criticality of each asset, gaps and inconsistencies surface early. Assets that truly matter receive appropriate attention, and lower-risk equipment is not over-maintained. This makes the overall maintenance strategy more defensible and predictable. Finally, the Navigator preserves knowledge that would otherwise be lost. Every interpretation, linkage, and decision becomes embedded in a structured model rather than remaining dependent on personal experience. Teams gain continuity, new engineers ramp up faster, and plants maintain a consistent technical standard over time. Together these effects create a more disciplined and technically reliable operation: fewer surprises, clearer decisions, and engineering work that is both faster and better supported by evidence. SELAI™ delivers four core engineering benefits:



Greater Technical Accuracy

All decisions are grounded in a complete interpretation of the entire technical evidence base.



Significant Time Reduction

Maintenance-build work that once required weeks can now be completed in hours, with higher quality.



Improved Risk Posture

Criticality-driven reasoning ensures that resources are applied where they matter most.



Preservation of Tacit Knowledge

Engineering insights become structured, repeatable and transferable. These improvements combine into a more stable, predictable, and auditable technical operation.



Behavioural Stability

SELAI™ creates predictability in how people work. By giving every engineer access to the same information base, the same reasoning and the same quality checks, interpretation differences and personal preferences disappear. Teams experience more clarity, calm and shared ownership, exactly the conditions needed to shift from firefighting to structural improvement.

7. Implementation & Adoption. Making SELAI™ Part of the Organisation

(Aligned with the Selas “Change First, Then Results™” model)

Implementing SELAI™ is not only a technical rollout; it is an organisational transition. The Navigator changes how engineers make decisions, how data is interpreted, and how maintenance and materials strategies are created. For this reason, adoption must follow a structured change approach rather than relying on technology alone.

Selas applies its proven **Change First, Then Results™** model to guide this process. The first step is preparing people, creating understanding of what SELAI™ does, how it supports their work, and which decisions remain human-owned. Only when this clarity exists can teams begin using the Navigator with confidence.

The introduction then proceeds through focused pilots where engineers and technicians see SELAI™ in action. They test its outputs, question its reasoning, and validate how it fits into their workflows. This early involvement builds ownership, a key principle in the Selas change model. As the organisation becomes comfortable, SELAI™ is embedded into standard procedures and integrated with SAP or Maximo. New routines stabilise, old habits fade, and the Navigator becomes a trusted reference for maintenance strategies and materials decisions.

In line with **Change First, Then Results™**, measurable improvements ; higher efficiency, better consistency, clearer risk alignment, appear only after the behavioural foundations are in place. By prioritising people first, the organisation ensures SELAI™ is not just implemented but truly adopted.



Strengthen the behavioural foundation

Technology changes nothing unless behaviour changes with it. SELAI™ delivers real impact only when teams start working differently: more evidence-based, less dependent on individual memory and with shorter cycles between decision and action. That is why SELAI™ adoption follows the same principles that Selas applies in transformations: action first, clear routines, visible leadership and repetition.

8. Strategic Impact. Improving Cash, Capital & Risk

SELAI™ strengthens the financial and operational core of asset-intensive companies.

- 😊 **Cash.** Less downtime, fewer unexpected failures, faster maintenance builds.
- 😊 **Capital.** Better decisions about overhaul, replacement and asset life extension.
- 😊 **Risk.** Consistent reasoning, better documentation, stronger compliance.

SELAI™ becomes a structural enabler of operational excellence.

9. Conclusion. A New Standard for Industrial Reliability

SELAI™ represents a shift in how industrial plants use information. Instead of relying on scattered documents and individual memory, the Navigator provides a unified, intelligent system that helps engineers make faster, better-informed and more consistent decisions.

- ✓ The plant becomes more predictable
- ✓ The work becomes more analytical
- ✓ Knowledge becomes more durable
- ✓ Risks become more visible
- ✓ And engineering becomes more strategic

SELAI™ is not automation. It is **augmented engineering**, a new foundation for the next decade of industrial performance.



Connect technology with leadership & behaviour

The greatest financial improvements occur when technology and behaviour evolve together. SELAI™ does not only produce better analyses, it enforces a way of working where assumptions are replaced by facts, risks become visible earlier and decisions are taken faster. This strengthens leadership, accelerates improvement cycles and makes operational performance predictable, the core of every industrial strategy.



Human & behavioural dimension

SELAI™ does not only transform how information is processed, it transforms how people work. By providing consistency and transparency, it becomes natural to make better-informed decisions, follow routines and reduce variation. This is where lasting results emerge: when technology changes the context and teams display behaviours that strengthen reliability, safety and performance. SELAI™ is therefore not only an AI system, but the foundation for a new standard in how plants think, decide and improve.

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