



EMPLEAIDO EC-01 × MALUDB

An AI accountant is only as trustworthy as the memory it can prove.

Empleaido builds AI employees for small and mid-sized businesses in the Dominican Republic. EC-01 — the fiscal employee — is the reference case for the memory architecture a regulated AI needs.

Pre-pilot · pilot cohort H1 2026 · infrastructure deployed, fiscal engine tested against simulated DGII payloads

Your accounting operation isn't replaced. It's multiplied.

Accounting is not a "current state" problem

Accounting is bitemporal. The DGII — the Dominican Republic's tax authority — does not only ask what is true. It asks what you believed to be true on the day you filed. A 606 report submitted in February, under a regulation amended in April, must remain auditable under February's rules — not today's. Conventional stacks cannot express that.

WHY EXISTING STACKS FAIL

Postgres + Redis

No native bitemporal model. No provenance chain from a source document to an applied rule.

Vector DBs (Pinecone, Qdrant)

Fast retrieval, but no validity window, no confidence score, no audit surface.

LLM memory libraries (Mem0, Letta)

They build a *user* model, not *institutional* memory. No multi-tenant compartmentalization, no validity tracking.

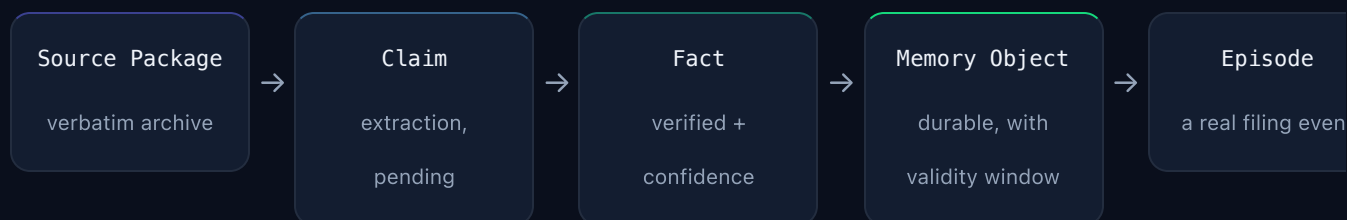
And there is a second cost. An AI accountant that re-discovers the same NCF rules and the same ITBIS exemption logic every session burns tokens rebuilding context that should be durable, queryable, and auditable. EC-01 should be able to answer: "How did I

handle this exact case for Client X eight months ago — and was that reasoning still valid on the date I filed?"

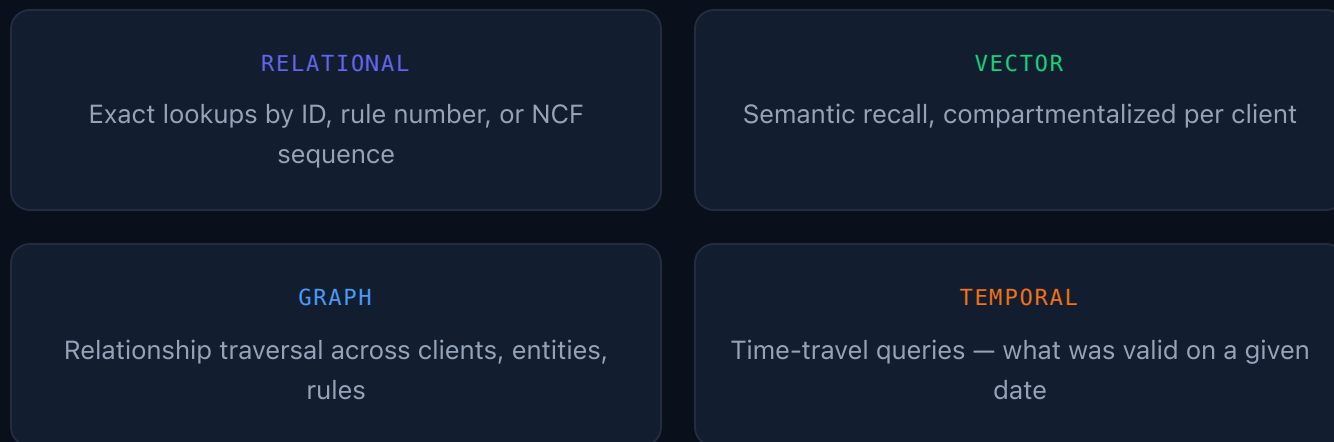
MaluDB: a database built for institutional memory

MaluDB is a Memory DBMS — a database designed for institutional memory and human-AI knowledge sharing, not just for data. It comes from the paper "A Scalable Database Management System for Long-Term Institutional Memory, Human-AI Knowledge Sharing, and Contextual Recall" (Honour et al., 2026; Zenodo, DOI 10.5281/zenodo.20114119). It stores not only what is true, but how that conclusion was reached — and when it was valid.

OBJECT MODEL PIPELINE



MaluDB's four search modes — relational, compartmentalized vector, graph, and temporal — map cleanly onto how a fiscal employee actually queries: exact lookups, semantic recall, relationship traversal ("which clients share this holding structure?"), and time-travel.



EC-01 — the fiscal employee

EC-01 is Empleaido's first chip in production: a fiscal and accounting employee. It prepares and files DGII compliance reports (606 purchases, 607 sales), validates NCF and RNC numbers, answers tax questions, and keeps a business audit-ready.

WHAT THE EC-01 ENGINE SHIPS TODAY

- **606 / 607 TXT generation**

DGII pipe-delimited format (NG 07-2018)

- **NCF sequence management**

Atomic, race-condition safe

- **RNC validation**

Against the DGII, with a 24-hour cache

- **Fiscal calendar & deadlines**

606/607/IT-1/IR-17, business-day adjusted

- **TSS payroll calculation**

AFP, SFS, SRL, INFOTEP rates

- **IR-17 monthly withholding**

2026 brackets

- **Expense classification**

DGII 606 codes, with confidence scoring

- **Labor-law calculations**

Severance, notice, vacations, bonuses

- **Trust Layer**

Every agent decision audited, source-cited, replayable

In the Dominican Republic the accountant is "*responsable solidario*" — personally liable for the fine when the DGII finds a discrepancy. EC-01 must be 100% audit-correct. That is why memory is not a feature for EC-01. It is the foundation.

EMPLEAIDO NEEDS

MALUDB PROVIDES

"What did we believe when we filed?"

Bitemporal model — `current_valid` / `historical_valid` / `transaction_time`

Every fiscal decision traceable to a DGII norm

Derivation Ledger — Source → Claim → Fact → Memory

Not re-discovering NCF rules every session

Facts with MAUT confidence / precision scoring

Each client's data strictly isolated

Compartmentalized retrieval

A reusable, validated procedure (e.g. "ITBIS exemption for medical services")

Skill Package — preconditions, validation, exceptions

Audit-ready by construction

Memory Objects carrying evidence, provenance, permissions, validity

What is built — and what is designed

DEPLOYED TODAY

- ✓ Source preservation for DGII documents and filings
- ✓ Memory Objects with durable context per client
- ✓ Procedural Memory — validated fiscal procedures
- ✓ Skill Packages — reusable, executable routines
- ✓ Trust Layer that audits every agent decision

DESIGNED, NOT YET BUILT

- Bitemporal validity (`valid_time` + `transaction_time`)
- MAUT confidence / precision scoring
- Temporal Supersession Engine
- Typed Relationship Edges (supports / contradicts / supersedes)

- ✓ Cost-aware model routing (ZAI → DeepSeek → OpenRouter)
- ✓ EC-01 runs on Supabase and pgvector today

Empleaido already implements the spirit of the model — roughly 65% of MaluDB's canonical object model conceptually, about 40% structurally. MaluDB is the designed direction — not a shipped integration. The four subsystems above are exactly what MaluDB's model is designed to provide rather than have EC-01 reinvent.

One filing, traced end to end

A worked example — illustrative.

In August 2025, EC-01 handles an ITBIS exemption for medical services for a client. The memory layer records it as a chain:



Source Package

A DGII circular on healthcare exemptions, preserved verbatim as the original document.

Claim

"Medical ambulatory services are ITBIS-exempt."

Fact

The classification rule, carrying a confidence score.

Memory Object

"Client: ITBIS exemption, medical — valid 2025-08-01 to 2025-12-31."

Episode

The 606 filing for that period.

Skill Package

"Medical ITBIS Exemption Handler" — a reusable procedure with its preconditions and exceptions.

Eight months later, the DGII audits the August 2025 filing. EC-01 answers under the rules valid on the filing date — not today's — and shows the source document, the validity window, and the decision lineage. That is the difference between an AI that guesses and an AI that can prove.

One substrate, four regulated verticals

The memory model — bitemporal validity, the derivation ledger, Skill Packages — is vertical-agnostic. EC-01 (fiscal) is the first chip:

EC-01

Fiscal

DGII compliance with a provable audit trail.

live reference case

EL-09

Government tenders

Bidding history with confidence scoring.

designed

EJ-06

Legal

Case memory with bitemporal validity.

designed

EF-04

Finance

Risk decisions with a full audit trail.

designed



Empleaido is pre-pilot. The infrastructure is real, the fiscal engine is tested against simulated DGII payloads, and the pilot cohort is targeted for H1 2026. Any numbers in a follow-up are projections until the pilot runs.

Memory DBMS: Honour, Lehman, Ali, Abi Fadel, Mechbal, Nadar, Khan, Nadal, Jolly & Rey (2026). "A Scalable Database Management System for Long-Term Institutional Memory, Human-AI Knowledge Sharing, and Contextual Recall." Zenodo, DOI 10.5281/zenodo.20114119.

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