

DEEP TECH LABS

PLOC 

**SETTLEMENT, OFFERS
AND CREDIT PLATFORM**

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Value moves. Rules remain.

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Notice

This paper presents a Deep Tech Labs product in its preliminary development and fundraising stage. PLOC and the other DTL products mentioned here are in pre-alpha 1, a planned phase for consolidating architecture, pilots, partnerships and investment before production. This paper is not an investment offer, security, account, currency, yield promise, or compliance statement. Brazilian-real custody and redemption will be activated through an appropriate legal structure and regulated partner.

Executive summary

Brazilian commerce moves value through more than checkout payments: campaign funds, cashback, coupons, supplier credits, rebates, consignment, shelf space, in-store media, early payment, inventory and turnover evidence. These rights are economically meaningful but remain scattered across spreadsheets, PDFs, ERP modules, messages and manual reconciliations.

PLOC, a Deep Tech Labs product, is designed as the operating infrastructure for these instruments. Retailers, wholesalers, brands, suppliers, cooperatives and service providers create private networks, define rules, reserve resources, issue commercial assets, coordinate exchanges and produce a verifiable trail. A consumer sees a balance, coupon and QR. A cashier sees a short confirmation. An enterprise sees ERP, CRM, contracts, authority levels, risk, evidence, settlement and accounting exports.

PLOC stands for Plataforma de Liquidação, Ofertas e Crédito — Settlement, Offers and Credit Platform. PLOC Pay is its retail wallet. Beneath the interfaces, a private TL2N subsystem provides versioned agreements, signed append-only records, positions, locks, PvP, DvP, attestations, checkpoints and portable proofs. TL2N does not replace law, contracts or physical reality. It makes it demonstrable who decided what, under which rules, and with which result.

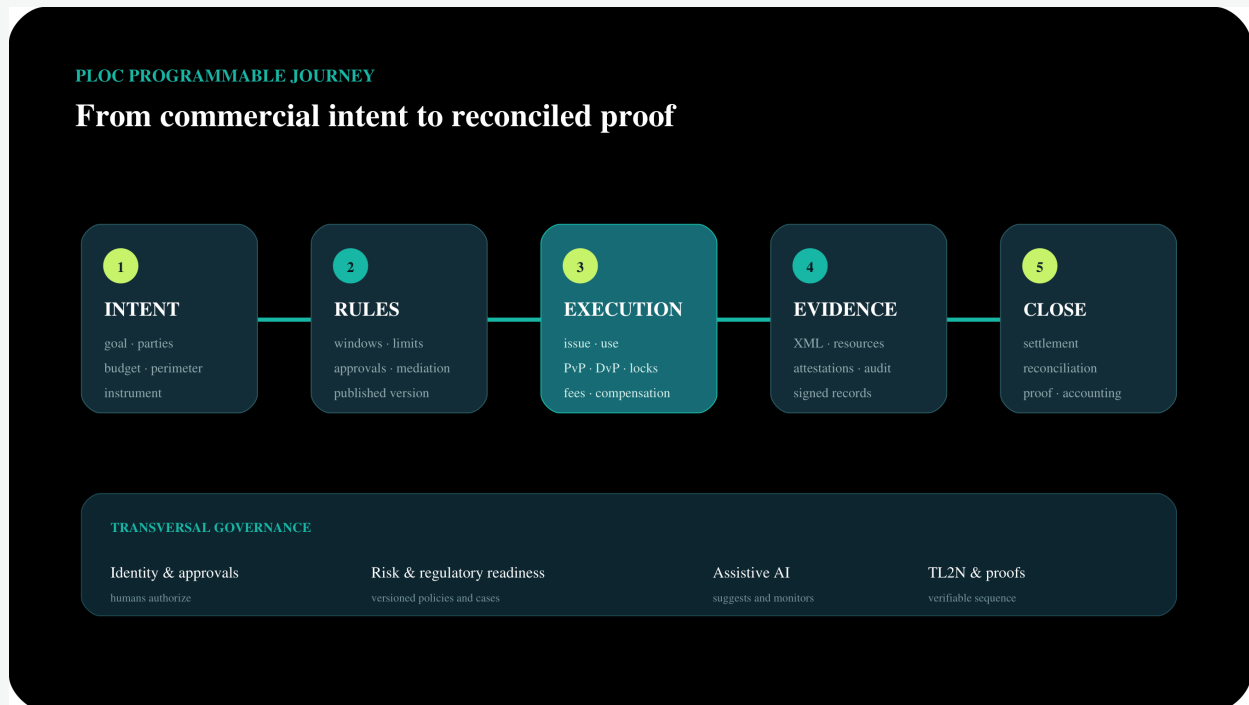
The entry wedge is pragmatic: closed campaigns and benefits, a limited pilot in Belo Horizonte, mobile/counter operation, and cooperative fiscal XML ingestion without replacing the point-of-sale system. Supplier credit, commercial-space inventory, stock/turnover evidence and, after legal gates, regulated custody and redemption build on that foundation.

1. The missing layer in commercial value

Companies have systems, but the relationships between them cross fragile boundaries. A supplier funds a campaign and receives late reports. A store proves execution with photos and spreadsheets. A coupon follows a different clock from its campaign. Commercial credit lives in messages and exceptions. Accountants reformat data. Consumers cannot tell where value is usable.

Three failures repeat: rules do not travel with value; evidence arrives after the decision; reconciliation becomes bespoke work. The result is conservative behavior — smaller campaigns, expensive credit, idle reserves and low trust. PLOC structures existing economic relationships rather than manufacturing artificial demand.

The fundamental product unit is not a token in isolation. It is a contractual and operational journey: parties, instrument, versioned rules, resources, authorizations, execution, evidence, settlement and close. A programmable asset is the portable expression of a specifically defined right or obligation.



PLOC operating flow: from commercial intent to proof and reconciliation

2. Four product surfaces

PLOC Pay is a lightweight PWA wallet. It explains where, when, with which products and for how much a benefit may be used. It supports Portuguese and a limited language set for visitors in Brazil.

PLOC Counter is built for speed under pressure. QR or a short code pairs the operation. The screen emphasizes amount, eligibility, action and outcome. Connectivity loss never becomes a false success.

PLOC Enterprise is a Brazil-first ERP/CRM for organizations, stores, participants, contracts, campaigns, catalogs, approvals, treasury, compliance, support, reconciliation, reporting and integrations. Consultative AI reduces reading and configuration work; a human remains responsible.

PLOC Edge is a signed Windows/Linux agent for approved systems. It reads historical XML or near-real-time events, normalizes locally, retains a durable cursor and sends idempotent facts/evidence. The POS continues to operate if PLOC is unavailable. ZIP upload comes first; native adapters follow demonstrated value.

Anticipatory regulatory readiness

PLOC provisions regulatory controls before a specific license, partner agreement or obligation forces a retrofit. From the pilot onward, the architecture includes a legal-product inventory, flow-of-funds matrix, obligation ledger, beneficial-owner data, versioned policies, limits, monitoring, cases, retention, reconciliation, decision trails and exportable reports.

This preparation shortens integration with regulated institutions and gives counsel, compliance teams and partners concrete evidence to assess. Regulatory readiness is not a premature compliance claim; it is the engineering discipline required to reach compliance efficiently.

3. Core journeys

Territorial campaigns

A brand enters an objective, budget and geographic perimeter. AI suggests municipalities, stores, participants and invitations; a manager decides. Earning, use and settlement windows are distinct. A campaign may stop acquisition while already-issued benefits remain valid, or it may require use before campaign closure. Participants accept explicit terms; published versions are never silently edited.

Restricted BRL-denominated cashback

A sponsor may issue a benefit expressed in Brazilian reais and pre-funded under the chosen model, without making it cash-redeemable by the consumer. Rules limit network, store, product, period, purchase share, transfer and lot fungibility. An eligible accepting merchant may hold a contractual redemption right subject to onboarding and controls.

The interface never labels every position “cash.” It explains the actual right. Amounts use integer centavos and preserve origin, lot and available/locked/used/expired/redeemable states.

Conditional coupons

Coupons express fixed value or formula: BRL 15 above BRL 150, 30% for a brand subset, caps, channels, waiting periods and stacking. The engine applies the rule to an evidenced basket. Returns reference the original transaction.

The initial evidence path is retailer cooperation through fiscal XML. ZIP supports history and Edge supports continuous feeds. A receipt QR is not assumed to be a universal item-level API. Client-side processing reduces transfer, but strong evidence combines an authorized source, hashes, Edge/backend controls, reconciliation and, where appropriate, encrypted samples.

Supplier credit and PvP

Two businesses can exchange tailored commercial assets. Each leg has amount, policy, transferability and fees. Both parties authorize the exact version; all legs lock and confirm, or no partial exchange remains. “Credit” continues to mean a specified contractual right, not a bank deposit created by UI language.

Delivery versus payment

The contract defines the object, time window, tolerances, attestor, auditor, resources and compensation. Payment locks while delivery occurs in the physical world or an external system. A signed attestation declares the result. Positive prepares commit; negative or timeout releases/compensates under agreed terms.

PLOC does not claim impossible physical atomicity. Delivery, application database commit, TL2N COMMITTED, finalized checkpoint and external immutability evidence are separate milestones.

Programmable commercial space

Stores, chains, cooperatives and DOOH providers register shelves, islands, windows, screens and periods. They can form lots across hundreds of locations. Brands acquire contractual usage rights; resources carry creative materials; installation or playback is attested; make-good and compensation follow the contract. Secondary transfer is gated by legal analysis and concentration/transparency controls.

In this domain, PLOC will provide high-level transactional infrastructure to ElZagora (elzagora.com.br), another Deep Tech Labs product for advanced management of DOOH resources, professionals and consumers. ElZagora coordinates inventory, production and media execution; PLOC supplies programmable contracts, assets, positions, settlement, fees, evidence and TL2N integration.

Inventory and turnover evidence

Fiscal XML, catalogs, movement events and audits describe existence, age, concentration and turnover. PLOC produces versioned evidence and the creditor decides. If an instrument is issued, the contract states the exact right and enforcement mechanism. A hash does not turn inventory into perfect collateral; an attestation is not universal truth.

Regulated redemption

An enterprise funds through a backoffice/partner flow and receives a reconciled enterprise position; it issues obligations within reserved limits; an eligible participant requests redemption; KYC/KYB/AML, approvals and reconciliation precede the financial instruction. Signed webhooks and polling confirm execution.

This comes after the pilot. PLOC favors a regulated partner over prematurely internalizing safeguarding, payment rails and statutory reporting.

Accounting exports

Accountants keep their familiar software. PLOC exports economic facts through parameterized CSV/XLSX, OFX, XML, JSON/API, proprietary TXT and a ZIP package. An approved mapping links each event to accounts, cost centers and recognition rules. Manifests, versions, hashes and control totals support import verification.

CoBot-operated flows

Every PLOC journey will also be exposed through APIs and operation contracts consumable by CoBot, a Deep Tech Labs product under development for operative AI, generative dashboards and complex-flow execution. CoBot combines AI planning, programmable sandbox execution, a skill library and specialist agents integrated into enterprise hierarchies.

Its scope includes large COBOL estates as well as other software generations, graphical interfaces, SQL, scripts and operational tools. By consuming PLOC and TL2N APIs, CoBot connects legacy systems to campaigns, credit, PvP, DvP, evidence, contracts and settlement without requiring direct intervention in those systems. PLOC approvals, human confirmation and policies remain authoritative.

4. Trust, governance and AI

Progressive identity and AML controls combine person type, operation, single and cumulative volume, transaction count, velocity, geography, network and risk signals. Token-bucket controls limit velocity; a case engine prevents scores from becoming unexplained final decisions.

Enterprise structures provide segregation and authority levels. Passkeys reduce phishing. Sensitive desktop actions require mobile step-up. The encrypted seed vault retrieves a blob through mobile authentication without claiming server possession of the seed. Self-custody, user cloud/external backup, enterprise custody and advanced custody APIs are distinct contractual products.

AI is a governed adapter with a multi-provider catalog, approved skills, policies, budgets, cost and evaluation. It drafts and reads contracts, compares versions, explains campaigns, classifies tickets and monitors systems. The human provides the final click. AI, storage and TL2N usage are metered and recoverable costs.

The Deep Tech Labs ecosystem

PLOC is the shared commercial and financial infrastructure of the Deep Tech Labs portfolio. TL2N preserves agreements, signed records, positions and proofs. PLOC translates that protocol into business journeys. ElZagora applies those journeys to DOOH, resources, professionals and consumers. CoBot brings them to legacy systems through planning, skills and programmable execution.

DEEP TECH LABS PORTFOLIO

Shared infrastructure, specialized products



Each product keeps its focus while sharing identity, governance, contracts and transaction infrastructure.

Deep Tech Labs ecosystem: TL2N, PLOC, ElZagora and CoBot

5. Architecture and economics

The backend begins as a modular Node.js/PostgreSQL monolith. Stateless APIs scale behind Nginx. A writer owns commands and admission: synchronous work receives a logical capacity slot; asynchronous work enters a queue; saturation returns Retry-After. WebSocket is the single bilateral persistent channel.

Databases are separated by hardware profile — core OLTP, append-heavy transactions, read-heavy ledger, evidence, delivery, AI runtime and archive — initially on one cluster. No cross-database foreign keys. Outbox/inbox, global IDs, cursors and reconciliation make consistency explicit.

Predictive caching publishes complete projection generations after commit and ledger update. A cached balance may lag for display, with an as-of cursor. Spending authorization never relies on a potentially stale cache.

Consumers are free. Revenue combines enterprise subscriptions, per-store/modules, managed-budget and transaction fees, space-marketplace fees, Edge/connectors, implementation, API/webhooks, signed reports, evidence retention, AI/TL2N/storage usage, white label and SLA.

6. Go-to-market and roadmap

Belo Horizonte provides operational proximity, willing retailers and a retail-software relationship. The initial wedge is a supplier-funded closed benefit with PWA/counter use and fiscal XML evidence. It requires neither POS replacement nor consumer cash redemption.

Months 0–2 establish design, threat model, domain contracts and simulation. Months 2–5 deliver a campaign vertical slice. Months 5–8 run a limited BH pilot with 3–10 stores and 500–2,000 invited consumers. Edge and enterprise operations mature by month 12. Supplier PvP/DvP follows TL2N gates around months 12–16. A regulated-partner track runs in parallel around months 14–20. Commercial space, inventory evidence and capacity-based scaling follow around months 18–24.

Dates yield to gates: complete reconciliation, harmless replay, exact ledger rebuild, demonstrated security and recovery, legal opinions and field acceptance.

7. TL2N and the PLOC difference

TL2N is a toolkit for closed, federated coordination, record and settlement networks. Each network has an immutable identity and versioned Basic Agreements — TBAs — defining network and asset policy. A transaction is a graph of signed records. The root creates identity; replies, votes, audits, attestations, locks, results and compensations are later records linked to the exact target.

Accepted records enter an ordered append-only RECORDSET. Positions and states are rebuildable projections. Signed checkpoints cover heads, projections and policy; external providers may add evidence under ALL, ANY or THRESHOLD policy. Portable proofs can verify records, transactions and checkpoints offline.

Confidentiality combines public commitments and encrypted scopes. Parties retain durable key boxes; validators can receive temporary purgeable grants. Resources carry encrypted online

content or off-net descriptors bound by hash. Metadata leakage remains part of the threat model.

In PvP, both legs and fees lock and commit together. In DvP, payment locks while a delivery attestation is awaited; positive prepares commit, while negative or timeout releases/compensates. Long waits are durable states, not open database transactions.

For PLOC, this unifies rule, decision, resource, position and proof into a verifiable history without exposing the protocol to users. Enterprise translates contracts and approvals; Pay translates positions; Counter translates eligibility; Edge translates operational facts; TL2N preserves the protocol.

The current stage matches Deep Tech Labs' fundraising and product-building phase. TL2N v0.1.73 is an alpha reference that already provides the protocol foundation used in PLOC's design. Planned evolution includes multi-host operation, high availability, institutional key custody, an embedded wallet and completion of external gates. Reference REAL-TL2N remains a synthetic demonstration asset; regulated representation of Brazilian reais in PLOC will depend on the relevant partner and legal model.

PLOC pins versions, reconciles domains and uses progressive gates to bring this foundation into production. An attestation is a signed statement inside a contract; its strength comes from identity, role, evidence and the consequences agreed in advance.

This combination — accessible Brazilian workflows, enterprise operations, anticipatory regulatory readiness and protocol infrastructure evolving with the product — is the basis for a defensible new category.

References

See the included TL2N v0.1.73 technical distill and docs/sources/SOURCES.md. Regulatory interpretations are hypotheses for qualified Brazilian counsel.