FLUIDCLUSTER ERP: THE 10 CORE COOPERATIVE MODULES

Disrupting Siloed Enterprise Systems via Confidential Deep Tech & Privacy-Enhancing Technologies (PETs)

Computational Blindness as an Enforcement Engine: FluidCluster enables independent enterprises to pool sensitive operational telemetry, optimize margins, and access institutional capital structures inside a zero-trust cipher domain ($FHEVM$, $SMPC$, ZKP, PSI) with absolute local data sovereignty.

1. Advanced Netting & Treasury Operations

Ingests secret-shared cross-firm debt vectors via SMPC Garbled Circuits to resolve complex debt cycles blindly. Achieves complete asset derecognition and legal offsetting under **IAS 32** to maximize balance-sheet liquidity.

2. Collaborative Procurement & Collective Purchasing

Aggregates fragmented PME buying volumes and processes vendor quotes inside double-blind homomorphic smart contracts. Preempts market exposure, eliminates cartelization penalties, and matches **IAS 2** acquisition rules.

3. Shared Revenue Management & Attribution Loops

Tracks and splits cross-enterprise product margins securely over encrypted system state variables. Employs an on-chain **Shapley Value Oracle** to enforce stable, unalterable profit allocations based on exact marginal value contributions.

4. Grouped Finance Products & ABCP Securitization

Tokenizes net-residual clearings into fractional Asset-Backed Commercial Paper digital tranches. Uses autonomous AI agent swarms to run background risk tiering for compliant off-balance sheet placement under **IFRS 9**.

5. Inventory Optimization & Supply Chain Coordination

Neutralizes the Bullwhip Effect through decentralized linear code models running on CKKS Homomorphic Encryption. Determines optimal reorder parameters blindly over pooled stock sheets, reducing **IAS 2** obsolescence.

6. Collaborative Asset Sourcing & Lease Management

Maps unutilized machinery, freight space, and manufacturing capacity across unrelated supplier networks. Computes availability vectors homomorphically inside **IFRS 16 Leases** constraints without disclosing underlying operations.

7. Confidential HR Operations & Pool-Risk Alignment

Aggregates corporate benefit, healthcare, and pension exposures inside hardware-isolated TEE enclaves. Leverages Private Set Intersection (PSI) to run model updates and lower premiums while fully enforcing **GDPR/RGPD boundaries**.

8. Synthetic M&A Due Diligence & Data Rooms

Executes audit algorithms inside secluded AMD SEV/Intel SGX sandboxes to evaluate candidate firm customer churn and footprint overlap. Derives precise **IFRS 3 Goodwill** calculations without revealing raw data leaks.

9. Multi-Jurisdictional Fiscal Simulation

Simulates international transfer pricing setups over homomorphically masked corporate margin entries. Safely calculates optimized multi-country tax liabilities and **Pillar Two** boundaries, reducing **IAS 12** contingencies.

10. Decentralized Governance & Cap Table Security

Protects cross-company board execution paths, strategic resolutions, and alliance changes through completely shielded cryptographic voting frameworks, locking coalition equity allocations permanently inside immutable, tamper-proof state channels.

SYSTEMIC FRAMEWORK & OPEN-API TOPOGRAPHY

• **Decoupled Freezing Protection:** Boundary insulation proxies isolate asset freezes or legal freezes affecting public layers ($cUSDC/cUSDT$) strictly to the offending wallet, ensuring zero downward contamination into core multi-company netting registers.

• **ERC-7984 Audit Access:** Uses asymmetrical read-only cryptographic **View Keys** to supply tax regulators and external boards with clean compliance reports without exposing core commercial or trading data secrets.

• **Decreto-Lei n.º 150/2019 Sandbox Integration:** Configured for real-world deployment within authorized **Zero-Trust Experimental Sandbox Zones (ZLT#13)** to safely back tokenized credit streams with mathematical certainty.

• **Edge SDK Hash Logs:** Open SDKs ingest localized corporate tables (Postgres, SAP, Oracle) and compute encrypted polynomial fragments directly at the parameter edge. Every state change is locked sequentially into an unalterable, zero-knowledge verifiable hash chain.

FluidCluster Advanced Systems Group · November 2026 · Institutional System Architecture Matrix
Main Node: https://fluidcluster.pt | Engineering Sandbox Gateway: dev@fluidcluster.pt