

# CMX

## The Future of Capital Markets Infrastructure

### 1. Executive Summary

The global capital markets industry, representing over \$270 trillion in assets, remains constrained by outdated infrastructure, fragmented intermediaries, and persistent regulatory friction. These inefficiencies not only increase costs and operational risk but also limit access, transparency, and innovation across the financial ecosystem.

The CMX ("Capital Markets Exchange") Network introduces a next-generation financial settlement layer that is programmable, compliant by design, and scalable from day one. Starting as a high-performance Ethereum rollup, CMX evolves into a global network of interoperable, decentralized, modular global ledgers purpose-built for tokenized capital markets. By integrating the Espresso protocol for shared sequencing, multiple CMX rollups can synchronize state and messages, enabling horizontal scalability to handle a worldwide transaction load while maintaining robust compliance and data availability. This approach empowers institutions, investors, and companies to transact seamlessly in programmable equity and debt instruments, unlocking new efficiencies and opportunities for growth. By making capital markets programmable and standardized, CMX provides essential guardrails that lower costs and reduce complexity, helping to democratize participation for a broader range of users and institutions.

### 2. Vision

Our vision is to power a new financial internet where companies, investors, and institutions can issue, manage, and trade programmable equity and debt instruments with unprecedented efficiency and trust. By combining the security of Ethereum with the speed and flexibility of CMX, we aim to create a global platform that democratizes access to capital markets, fosters innovation, and sets a new standard for transparency and compliance. Just as the shipping container revolutionized global trade by enabling the seamless flow of goods between ports and countries, the tokenization of assets will unlock frictionless, borderless capital markets—standardizing and streamlining the movement of value across jurisdictions and participants worldwide.

### 3. Why Now

Several converging trends make this the ideal moment for a new capital markets infrastructure. The explosion of tokenized assets—including private equity, real estate, and investment funds—has created demand for scalable, compliant platforms. Advances in Ethereum scalability, particularly through rollups and modular architectures, now enable high-throughput, low-cost transactions. Regulatory progress is paving the way for compliant digital securities issuance, while the convergence of decentralized finance

(DeFi) and traditional finance (TradFi) highlights the urgent need for a programmable trust layer that bridges both worlds.

## 4. The CMX Network Stack

The CMX Network Stack is designed as a modular, future-proof architecture that evolves alongside the needs of capital markets. By leveraging the latest advancements in blockchain scalability, compliance, and data availability, the stack provides a robust foundation for secure, efficient, and programmable financial infrastructure. The stack is structured in phases, each introducing new capabilities and setting the stage for the next evolution of the network.

### Launch Phase

At launch, CMX delivers a high-performance, Ethereum-compatible rollup environment with a focus on compliance, user experience, and data availability. This phase establishes the core infrastructure and user-facing features necessary for rapid adoption and regulatory alignment.

- EVM Rollup: Arbitrum Orbit, fully EVM compatible
- Gas Token: CMX token native to the chain
- Smart Compliance: KYC/AML enforced via smart contracts and attestations (e.g. EAS)
- Wallet Experience: WebAuthn-enabled ERC-4337 smart wallets
- Paymasters: Abstract gas fees for a seamless user experience
- DA Infrastructure: Integrated with Celestia for modular, low-cost data availability

### Intermediate Upgrades

As the network matures, intermediate upgrades introduce advanced compliance, privacy, and cross-chain settlement features. These enhancements enable more sophisticated use cases and prepare the network for broader institutional adoption.

- Custom Sequencer: Enforce user access rules and integrate real-time compliance
- Espresso Integration: Implement the Espresso shared sequencing protocol to synchronize state across multiple CMX rollups, enabling atomic cross-chain transactions and horizontal scalability.
- Homomorphic Encryption Layer: Protect sensitive on-chain data (e.g., user balances) while preserving auditability

### Horizontal Scalability with Espresso

To handle a global transaction load, CMX will deploy additional rollups in strategic regions. Each rollup uses the Espresso protocol for shared sequencing, allowing rollups to exchange messages and batch transactions atomically. This horizontal scaling approach distributes computation and throughput, while retaining unified compliance and data availability across the CMX ecosystem.

## Long-Term Endpoint

The long-term vision for CMX is a fully decentralized, modular, and provable settlement infrastructure. This phase eliminates centralized intermediaries, maximizes compliance and auditability, and establishes CMX as a global standard for tokenized asset settlement.

- zkEVM Execution: Fast, provable transaction processing
- Decentralized Sequencing: Removes centralized intermediaries
- Modular Compliance Layer: zk-KYC, attestations, and regulatory auditability
- Global Settlement Infrastructure: DTCC-grade book of record for tokenized assets

## 5. CMX Token Utility

The CMX token is the lifeblood of the network, underpinning transaction execution, access control, and incentive mechanisms. By embedding utility directly into the protocol, the token supports a programmable and standardized environment that lowers barriers to entry and enables a wider range of participants to engage in capital markets activities. This approach not only aligns incentives across users, developers, and validators, but also helps democratize access by reducing costs and providing clear, automated guardrails for compliance and participation.

- Gas Token: CMX pays for transaction execution
- Access Control: Required to onboard apps or validators
- Paymaster Collateral: CMX used to sponsor gas on behalf of users
- Staking: Future use in decentralized sequencer selection and dispute resolution

## 6. Compliance by Design

Compliance is foundational to the CMX Network, not an afterthought. By embedding compliance directly into the protocol through programmable smart contracts, attestations, and identity systems, CMX ensures that regulatory requirements are met automatically and transparently. This approach not only reduces the burden on participants but also creates a safer, more accessible environment for global users. Programmable compliance provides the guardrails necessary for responsible innovation, enabling new entrants to participate with confidence while maintaining the trust of regulators and institutions. The network also adopts industry standards such as the Open Cap Format, which allows a tokenized asset to be linked to an off-chain document providing the full level of detail and rights that the asset grants, as well as established ISO standards for financial transactions and reporting.

- Attestation-based onboarding (EAS + WebAuthn)
- Smart contract-level enforcement of transfer restrictions
- On-chain audit logs and document verification
- Real-world identity and jurisdiction modeling for each wallet
- Support for global entities via GLF entity codes

## 7. Developer Ecosystem

A thriving developer ecosystem is essential to the success and evolution of the CMX Network. To ensure the network's storage, block space, and infrastructure remain streamlined and optimized, CapSign Inc. and the future governing body will provide guidance and support to developers building on the platform. While SDKs, Solidity APIs, and comprehensive documentation are accessible to all network participants, we encourage collaboration and best practices to maintain efficiency, security, and compliance. This approach empowers a diverse community of builders to shape the future of capital markets, balancing openness and innovation with the needs of a robust, well-governed financial infrastructure.

- Full EVM support for rapid adoption
- SDKs for tokenized equity, debt, and fund issuance
- Templates for compliant DeFi primitives (bond markets, secondary trading, shares, and fund interests)

## 8. Roadmap

### Q3–Q4 2025: MVP Launch

The initial phase focuses on establishing the core infrastructure and demonstrating the network's capabilities in a controlled environment. By launching a testnet on Arbitrum Orbit with Celestia DA, activating the CMX token, and enabling attestation-based smart wallets, CMX sets the stage for compliant, on-chain securities as its first use case. The MVP will support share classes (such as common or preferred equity) and both open-end and closed-end fund interests as tokenized assets, with planned expansion into additional asset types later in the roadmap. An on-chain KYC registry will be available from the outset as part of the attestation-based access system. This phase is critical for validating the technology, onboarding early adopters, and refining the user experience.

- Testnet launched on Arbitrum Orbit using Celestia DA
- CMX token live
- ERC-4337 smart wallets with attestation-based access
- On-chain KYC registry with EAS
- First use case: compliant on-chain securities

### 2026: Infrastructure Scaling

With the foundation in place, the next phase is dedicated to scaling the network for broader adoption and enhanced privacy. The mainnet launch, introduction of homomorphic encryption for confidential balances, and deployment of a custom sequencer for compliance enforcement based on user jurisdiction all contribute to a more robust, secure, and compliant infrastructure. This phase will focus on expanding support for a broader range of tokenized asset standards and exploring the introduction of exempt offering contracts tailored for non-US users. Exploration of zk-KYC and zk-TLS solutions will also be undertaken to further enhance privacy-preserving compliance and secure data transmission.

- Mainnet launch
- Homomorphic encryption for on-chain balance confidentiality

- Custom sequencer for compliance enforcement based on user jurisdiction
- Exploration of exempt offering contracts for non-US users
- Exploration of zk-KYC and zk-TLS solutions

## **2027 and Beyond: Transition to Endpoint Architecture**

The long-term vision is realized in this phase, as CMX transitions to a fully modular, decentralized, and provable settlement system. Upgrades to the data availability layer, integration with shared sequencers, and the adoption of zkEVM for full provability pave the way for a decentralized global settlement system. This stage positions CMX as the backbone for next-generation capital markets infrastructure worldwide.

- Move to modular DA layer (EigenDA/Celestia)
- Integration with shared sequencer
- zkEVM upgrade for full provability
- Begin path toward decentralized global settlement system

## **9. TradFi Integration Strategy**

The CMX Network is designed to bridge the gap between traditional finance (TradFi) and the emerging world of digital assets. Our integration strategy is structured in phases, each targeting a key area of transformation within capital markets. By modernizing private markets, unlocking secondary liquidity, enabling public market connectivity, and onboarding institutions, CMX aims to create a seamless pathway for traditional financial entities to participate in and benefit from next-generation infrastructure.

### **Phase 1: Modernize the Private Markets**

The first phase focuses on digitizing and streamlining private market operations. By providing advanced cap table management and enabling tokenized primary placements with built-in compliance and smart escrow, CMX empowers companies and funds to operate more efficiently and transparently from day one. In terms of investment contracts, the initial launch will support Regulation 506(b), 506(c), Regulation S, and Regulation CF offerings, with share classes (such as common or preferred equity) and both open-end and closed-end fund interests as tokenized assets. Expansion into additional asset types is planned as the ecosystem matures.

- Cap Table Management for Companies & Funds
- Tokenized primary placements with smart escrow, compliance gating
- Regulation 506(b), 506(c), Regulation S, and Regulation CF offerings
- Support for share classes and fund interests as tokenized assets

### **Phase 2: Unlock Secondary Liquidity**

In this phase, CMX introduces mechanisms for peer-to-peer secondary trading and integration with Alternative Trading Systems (ATS). CMX acts as a bridge between ATS platforms, enabling seamless connectivity and liquidity aggregation across multiple venues. CapSign intends to establish an introducing broker to connect all existing ATS systems, further enhancing trading opportunities and market depth for participants, while maintaining strict market compliance and permissioning.

- Peer-to-peer secondary trading with permissioned market compliance
- ATS integration and connectivity
- Introducing broker to aggregate liquidity across ATS systems

### **Phase 3: Bridge to Public Markets**

The third phase extends the network's capabilities to public offerings and listed assets. By supporting IPOs, Regulation A+ offerings, and tender offers, and integrating with custody, broker-dealer, and transfer agent layers, CMX enables a compliant bridge between private and public markets. The network will also explore the introduction of exempt offering contracts tailored for non-US users.

- Public offerings: IPOs, Regulation A+, and tender offers
- Integrate custody, BD, and transfer agent layers
- Exploration of exempt offering contracts for non-US users

### **Phase 4: Institutional Onboarding**

The final phase is focused on large-scale institutional adoption. By providing APIs and infrastructure for fund administrators, brokers, and enterprises, CMX positions itself as the core ledgering and settlement infrastructure for global capital markets.

- APIs for fund admins, brokers, and enterprises
- CMX as core infrastructure for ledgering and settlement

## **10. About CapSign**

CapSign is the driving force behind the CMX Network, founded by an entrepreneur with a unique blend of experience in blockchain technology, capital markets, and digital asset innovation. With a background that includes work at Ripple—where the founder integrated Ripple's payments product with banks to enable global connectivity—private secondary marketplaces, and pioneering efforts in asset tokenization, CapSign's founder brings a rare perspective to the challenges and opportunities facing modern capital markets.

Motivated by a vision to democratize access to financial systems and unlock new efficiencies for institutions and investors, CapSign is committed to building secure, compliant, and future-ready infrastructure. The journey of CapSign is one of relentless curiosity, hands-on development, and a deep belief in the transformative power of programmable finance. By combining technical excellence with a passion for responsible innovation, CapSign aims to set new standards for transparency, accessibility, and trust in global finance—proving that a single founder, with the right vision and drive, can catalyze industry-wide change.

## **11. The CapSign Protocol: Next-Generation Capital Markets Infrastructure**

The CapSign Protocol, developed by CapSign Inc., is a comprehensive suite of smart contracts purpose-built for the unique demands of capital markets. At its core, the protocol provides a robust on-chain general ledger system, seamlessly integrated with off-chain subledgers. This hybrid architecture enables

entities to maintain granular, real-time financial records while preserving the privacy and scalability required for institutional adoption.

**On-Chain General Ledger and Off-Chain Subledgers.** The CapSign Protocol enables each entity to deploy its own on-chain general ledger, ensuring that financial records are isolated, secure, and tailored to the specific needs of each organization. For operational efficiency and privacy, entities can maintain off-chain subledgers that periodically roll up into their on-chain general ledger's control accounts. This design enables real-time financial reporting and compliance, while supporting complex organizational structures and multi-entity operations.

**Autoledgery and Integration.** The protocol natively integrates with on-chain treasury and payment systems, enabling "autoledgery"—the automatic posting of transactions to the appropriate accounts as funds move on-chain. This automation streamlines back-office operations and reduces the risk of manual errors. Accountants and finance professionals retain oversight by configuring the chart of accounts, reviewing transactions, and making adjustments as needed, ensuring that human expertise remains central to financial governance.

**Document Registry and Digital Signing.** A secure document registry and signing system is embedded within the protocol. Documents—such as investment agreements, compensation contracts, or CIIA (Confidential Information and Invention Assignment) agreements—can be hashed and registered on-chain, providing an immutable record of authenticity and provenance. Leveraging the protocol's identity system, authorized parties can digitally sign documents, binding them to specific transactions or entities and enabling seamless, compliant workflows for a wide range of use cases.

**Global Connectivity and Ecosystem Support.** Recognizing the global nature of capital markets, the CapSign Protocol is designed for extensibility and compliance across jurisdictions. The ecosystem features comprehensive documentation and a self-service platform, empowering users to configure custom sanctions and compliance requirements by country. To accelerate adoption and support complex integrations, CapSign Inc. will establish a consulting arm dedicated to helping institutions and enterprises leverage the protocol for innovative use cases and global TradFi connectivity.

By combining programmable compliance, real-time financial infrastructure, and a secure document management system, the CapSign Protocol sets a new standard for capital markets technology—bridging the gap between traditional finance and the decentralized future.