VISION

Capital allocators in crypto and traditional finance intuitively understand that we are driving towards a world where machine intelligence will offer superior risk-adjusted returns and automated composable portfolios will offer superior liquidity profiles and risk management.

The complexities of the current DeFi environment present a series of unsolved issues but also introduce a significant opportunity for capturing alpha for the sophisticated participant who takes a data-driven automated approach to capital allocation.

By simplifying and unifying DeFi execution, Makina aims to enable and power the next generation of onchain strategies executed by sophisticated operators and advanced AI Agents.

INTRODUCTION AND OVERVIEW

The Makina protocol introduces a novel framework for non-custodial onchain execution, addressing a significant gap in the DeFi ecosystem. While DeFi has successfully replicated many traditional financial primitives, coherent and consistent alpha capture remains underdeveloped and sophisticated onchain strategies are not broadly available to users across the space as the turnover and evolution in DeFi protocols is Darwinian in nature.

Makina proposes a highly adaptable and secure architecture designed to facilitate a broad spectrum of strategies, including yield farming, long-short strategies, and systematic trading strategies that allow users to construct a portfolio of best-in-class, risk-adjusted strategies, ensuring asset managers adhere to agreed-upon parameters and rule sets for risk management.

The seamless tokenization of these sophisticated and specialized onchain strategies will bring a new set of DeFi primitives into the ecosystem, fostering innovation through permissionless integrations and composability.

At the core of the protocol are strategy-specific vaults, called **Machines**, each managed by third-party strategists or AI Agents, called **Operators**. Operators are incentivized to maximize the long-term performance of their strategies according to the Machine's mandate (rules and parameters for deploying capital into opportunities).

Operators are restricted in their execution discretion by a set of pre-approved instructions that enforce what actions can be executed and an onchain optimistic risk control mechanism that enforces rules for portfolio composition and exposure limits.

Makina is non-custodial, permissionless, and transparent, offering significant advantages over both traditional infrastructure and existing DeFi protocols. It allows for maximum flexibility in strategy design, atomic and MEV-resistant execution, native cross-chain integrations, and infinite composability to any smart contract.

Makina is designed to be the ultimate execution engine for DeFi and a necessary infrastructure component of the emerging DeFAI space.

COMPETITIVE ADVANTAGES

Makina offers several key advantages over existing DeFi solutions and strategy tokenization frameworks:

1. **Infinite Composability:** The use of modular instructions allows for complex, adaptive strategies that can be rapidly deployed across multiple protocols and chains. This capability positions the protocol as a meta-aggregator for DeFi, enabling strategists to optimize across a diverse array of onchain opportunities.

2. **Decentralized Trust Model:** Makina is non-custodial and trust-minimized by constraining the Operators' actions through onchain execution proofs, maintaining full onchain accounting with no reliance on centralized off-chain oracles, enforcing generalized slippage checks, onchain exposure caps, and ensuring a full recovery mode for every strategy.

3. **Atomic Execution:** Makina instructions can encapsulate multi-step actions and execute them atomically. This provides maximum MEV protection and enables instant closing of positions in cases of emergency.

4. **Cross-Chain and Multi-Protocol Deployment:** Makina's architecture supports seamless operations across multiple EVM chains, overcoming the liquidity fragmentation challenges faced by other DeFi protocols. This cross-chain capability ensures that Operators using Makina can access the best opportunities wherever they arise.

5. **Superior UI/UX & Ease of Use:** From a user perspective, providing institutional-grade strategies with single-sided deployments of capital and an intuitive dashboard that provides real-time monitoring of a user's portfolio of positions will be a substantial step forward both within crypto and beyond.
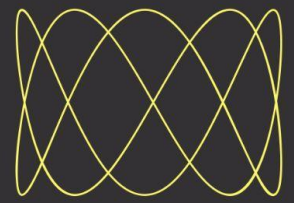
ARCHITECTURE

Machines are the core strategy specific vaults deployed on the Hub chain. Machines serve as the primary coordinator for all execution. They facilitate cross-chain bridging, accounting, risk management, and security controls.

Calibers serve as the protocol's execution layer. They can be deployed on any EVM-compatible chain. Calibers receive assets bridged by the Machine. They process instructions from the Operator to manage asset deployments, cross-chain bridging, and interactions with external smart contracts.

Operators are the strategists responsible for operating Machines. Operators have sufficient operational freedom, but their actions are constrained by the Machine's approved list of Instructions and its risk policy. They have aligned incentives with users through fee governance.

Governors are the oversight body that is responsible for approving instructions, setting risk policies, and key parameters for each strategy. Any changes made by the governor occur through a timelock and can be vetoed by a Security Council representing the Makina Protocol or the Machine Token holders who allocated their funds to the strategy.

Instructions are the primary operational primitives within the protocol, representing stateful, pre-approved commands that the Operators can execute. These Instructions are designed to be composable and flexible, allowing for complex atomic interactions with external protocols.

The Instructions Merkle Tree ensures that Operators can only execute Instructions that were pre-approved and are formed in a correct and secure way. Each instruction contains a set of transactions for which the target contract, function signature, and selected parameter values are fixed and verified against the Merkle Tree's root, stored in the caliber contract.

Machine Tokens are tokenized representations of the vaults' assets; they are minted and burned upon user deposits and withdrawals. Machine Tokens are fully liquid and transferable ERC-20 tokens. By leveraging Wormhole's NTT standard, Machine Tokens can be used on any chain and within any DeFi protocol, unlocking a new level of capital efficiency for crypto users.

The Risk Policy is composed of a set of risk attributes and exposure limits. Each position held by the machine can be tagged with an arbitrary number of attributes, then each attribute can be mapped to an exposure cap. This allows for fine-grained and granular risk management and provides an effective way of preventing over-exposure to any specific risk factor.

$MAK Token is the protocol's native governance token. It holds ultimate decision-making power of all key protocol parameters and decisions. Operators are required to stake a certain amount of $MAK tokens as a bond that can be slashed in case of violation of the risk policy.

GOVERNANCE

The governance framework is decentralized, relying on a vote-escrowed token model where veMAK token holders play a central role in decision-making. Governance is designed to balance broad participation with effective oversight and efficient execution by competent parties.

Makina will have the following specialized governance bodies:

1. MakinaDAO: the global and protocol-wide token-voting-based governance is the ultimate controller and owner of all Machines. The MakinaDAO can unilaterally remove any Operator or set any Machine into Recovery mode, if necessary and prompted to do so by the community. The MakinaDAO upholds the long-term vision of growing and improving the Makina protocol and its userbase, combining the interest of users, Operators and $MAK token holders, all of whom expect an appropriate cash flow for their contributions.

2. Security Council: A body responsible for vetoing proposals to update approved instructions and risk policies in Machines, as well as triggering Recovery Mode. The Security Council acts as a final safeguard, and faster-moving body representing the Machine LPs in emergency situations. Each Machine has its Security Council.

3. Risk Manager: A body that represents the users holding Machine Tokens in a specific Machine. The Risk Manager is responsible for approving new instructions, and setting risk policies and key parameters for the strategy. Each Machine has its Risk Manager.

4. Guardians: Small group of individuals that can pause the protocol globally in case of malicious activity and/or potential loss of funds. The Guardians are the *ultimate protectors* of the protocol.

General proposals in the DAO follow a standard lifecycle, with a focus on community participation and subject to simple-majority voting.

Approvals of new Instructions undergo a rigorous review process, including validation by the Security Council, ensuring that only secure, well-vetted strategies are deployed.

GO-TO-MARKET

Makina is set to launch with three tokenized DeFi Yielding Vaults, designed to showcase its superior infrastructure and attract users and TVL through these best-in-class strategies.

A leading, tenured, crypto-native asset management firm, will be the Operator of the three flagship yielding strategies, denominated in USD, ETH, and BTC. These strategies will deploy exclusively into onchain EVM-based DeFi protocols while ensuring no unhedged exposure to assets outside their base currencies.

The flagship strategies will showcase how Makina facilitates onchain execution by opening positions on 8+ EVM chains, 50+ DeFi protocols with a variety of yielding opportunities.

The target return for the three yielding strategies is 12-18% on USD, 10-14% on ETH, and 6-8% on BTC, based on the 4-year historical track record of the Operator managing analogous strategies. The target risk is medium-low, enforcing a high degree of diversification and using real-time monitoring and defensive-MEV for emergency unwinds; the risk algorithm has been developed and battle-tested over a number of years.

A pre-launch points campaign will launch alongside the opening of pre-deposit vaults to bootstrap liquidity. Upon launch of the protocol with the three flagship strategies, a second points season will begin.

An ICO will take place once Makina has successfully bootstrapped the initial TVL. All points accrued up to that point will be converted into locked Makina tokens (LMAK). The ICO will begin with a priority phase only accessible to LMAK holders where maximum participation is proportional to LMAK holdings. After the priority phase all remaining unsold tokens will be made available to the public. All tokens purchased in the ICO as well as all LMAK tokens will be on a linear vesting schedule.

Future iterations of the Makina protocol will focus on increasing flexibility in features (e.g., fee modules) and onboarding diverse types of investment strategies beyond the initial flagship launch strategies. The long-term vision of Makina is to facilitate alpha capture by strategists across DeFi, and democratize access to sophisticated investment strategies.