MAAL WHITEPAPER

Version 2023-08

Disclaimer

This white paper, in its entirety or any part thereof, may not be reproduced, redistributed, directly or indirectly shared with any other individual, or published for any purpose without prior written consent from Tijarah Holding Ltd. The content within this white paper is provided for informational purposes only and should not be construed as an offer, invitation, or recommendation for the subscription, purchase, or acquisition of digital assets issued by Tijarah Holding Ltd. The white paper and its contents do not form the basis of any contractual agreement or commitment.

This white paper does not constitute financial product or investment advice. It does not consider the investment objectives, financial situation, or specific needs of any reader or subscriber. Before considering an investment in the digital assets offered by Tijarah Holding Ltd., prospective subscribers should evaluate whether such an investment aligns with their unique investment goals, financial circumstances, and objectives. They are encouraged to seek appropriate legal professional, tax/accounting professional and financial advisor advice.

Please be aware that this white paper may contain forward-looking statements pertaining to the risks associated with blockchain technology, digital asset trading, and usage. These forward-looking statements do not guarantee future performance and encompass both known and unknown risks, uncertainties, assumptions, and various significant factors, many of which are beyond the control of Tijarah Holding Ltd. While the expectations outlined in these statements are considered reasonable, they may be influenced by a range of variables and changes in underlying assumptions that could lead to substantial differences in actual results or trends. Tijarah Holding Ltd. makes no representation or warranty regarding the accuracy of these statements or assumptions.

Tijarah Holding Ltd., its subsidiaries, affiliates, as well as the directors, employees, agents, representatives, or advisers of any such entities, and any other party, explicitly disclaim any liability for losses arising from the use of this white paper, its contents, or any matters related to it. This includes, but is not limited to, liability arising from negligence, fault, or any other cause.

Contents

Maal Blockchain (“MaalChain”)

For centuries, our world has primarily functioned within centralized systems. Whether in the domains of finance, governance, or corporations, the top-down approach prevailed as the standard. Wisdom and knowledge were centralized at the apex, and this wisdom subsequently disseminated downwards. This concept of wisdom effectively sustained centralized systems for centuries. Nonetheless, this model, although proficient in numerous respects, was not immune to shortcomings. It frequently resulted in bottlenecks, inefficiencies, vulnerability to corruption, and a deficiency in genuine democracy.

The transition of financial institutions, government agencies, and regulatory authorities from their centralized structures to a decentralized blockchain and Web3 technology-based environment poses substantial challenges, despite the numerous benefits on offer. These challenges predominantly involve hurdles faced by regulators, financial institutions, and government bodies as they attempt to adopt this technology. The primary concerns revolve around issues related to identity compliance and the source of funds.

MaalChain effectively addresses these challenges, concerns, and skepticism associated with existing blockchains and dApps. This is achieved through the integration of innovative Web3 technology called "Concept-of-Identity," which creates a hybrid solution through combining private dApps within a public DLT blockchain which bridges the wisdom gap.

It is frequently asserted that the Muslim population lags in the adoption of blockchain and Web3 technologies. However, contrary to this perception, the adoption rate among Muslims surpasses that of non-Muslims. The adoption of blockchain and Web3 within the Muslim community accounts for an impressive 1.05% of the 1.9 billion-strong Muslim population, exceeding the 0.94% adoption rate observed in the rest of the world. Often, the Islamic market has been described as underserved, however in reality, it stands as the fastest-growing demographic in blockchain and Web3 adoption. The reason for this phenomenon is quite straightforward: decentralized blockchain and Web3 technologies align exceptionally well with the principles of Maqasid Al Sharia, which encompass facilitation, security, transparency, and anti-monopoly measures. MaalChain leverages AI technology known as "Al-Muttaqin" to incorporate Maqasid Al Sharia principles, thereby providing an opportunity for Muslims to embrace MaalChain.

MaalChain finds the right balance between centralized wisdom and decentralized power. Too much centralization risks a return to old flaws, while too much decentralization without guidance could lead to chaos.

MaalChain Architecture

MaalChain functions as a layer-2 blockchain solution by harnessing the capabilities of Polygon Edge. Polygon Edge is a bridged proof-of-stake (PoS) blockchain engineered to expedite and economize transactions when compared with numerous existing blockchains. It offers developers the advantage of standardized libraries that streamline dApps development, eliminating the need for a steep learning curve. MaalChain takes developer flexibility a step further by presenting an array of modules for crafting tailor-made private dApps featuring specific parameters and rules. Moreover, it seamlessly integrates with well-established EVM tools and infrastructure, streamlining the entire process of developing and deploying applications on the MaalChain platform. In addition, Maal supports the creation and deployment of other tokens on its blockchain using Maal-20 smart contracts.

MaalChain features a three-layer architecture designed to optimize efficiency, scalability, and security. The first layer focuses on enhancing blockchain security through the utilization of layer-1 security. This layer plays a critical role in executing fundamental tasks such as checkpointing, staking, dispute resolution, and message relaying. The second layer is the Bridged Oracle Relay (BOR), often referred to as the block producer layer. This layer functions as a sidechain specifically engineered for the bulk processing of transactions, effectively alleviating congestion on the MaalChain. The third layer, known as the Heimdall Bridge, assumes responsibility for PoS validation. Its primary function involves aggregating blocks produced by the BOR layer into a Merkle tree and periodically publishing the Merkle root to Ethereum, a process referred to as checkpointing. Checkpointing serves the purpose of creating snapshots of the BOR sidechain on the root chain at specified time intervals known as "epochs," thus ensuring the integrity of blocks.

Additionally, MaalChain employs a Fraud Proofs mechanism, allowing users to submit information regarding any transactions that they believe to be fraudulent. This system improves transaction security by providing an additional layer of accountability and transparency to the MaalChain.

The MaalChain contract library can be found at: https://docs.maalscan.io/maal-contract-library.

BOR (Bridge Oracle Relay)

BOR is a crucial part of the MaalChain, playing a dual role in the ecosystem. Firstly, it integrates with Maal to process transactions in bulk, reducing network congestion and accelerating transaction processing. Secondly, BOR acts as a bridge between Maal and the Polygon PoS blockchain, allowing for seamless transfer of assets and data between the two. The validators in BOR create checkpoints of BOR sidechain blocks, which are then submitted to Maal for validation and inclusion, ensuring that all validators agree on the state of the blockchain and enhancing its security.

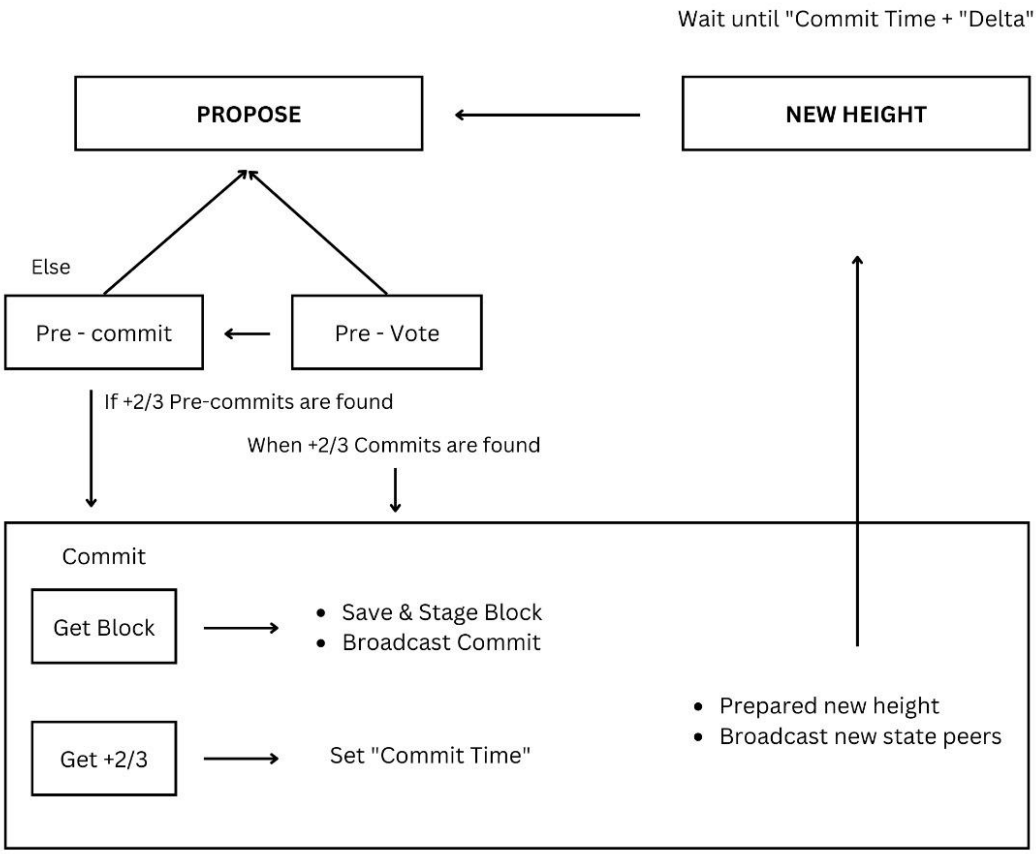
BOR optimizes efficiency and reduces processing overhead by prioritizing transactions that pay the highest gas price and processing them in batches. Moreover, it enables cross-chain communication and data transfer between different blockchains, increasing flexibility and interoperability for Maal. With support for multiple shard chains, BOR facilitates decentralization, reduces transaction costs, and promotes cross-chain interactions, leading to improved scalability, security, and efficiency of Maal.

Heimdall Bridge

The Heimdall Bridge is a critical component in ensuring reliable and secure digital asset transfers between BOR, Ethereum, and MaalChain (MaalChain). It acts as a checkpoint manager, connecting Ethereum and the Polygon PoS blockchains and uses a decentralized network of validators to create checkpoints on Maal that reference the state of the Ethereum blockchain at a specific time. These checkpoints are essential for maintaining the accuracy and integrity of transactions across different blockchains. Checkpoints are created using Merkle tree structures, which are then submitted to the MaalChain through the root chain gatekeeper node, ensuring that all validators agree on the state of the blockchain at the end of each epoch.

In addition to creating checkpoints on Maal, the Heimdall Bridge also creates checkpoints on BOR to verify transaction accuracy and integrity across different blockchains. This feature helps prevent any loss or damage to digital assets, making the Heimdall Bridge a trustworthy solution for secure digital asset transfers.

Beyond its checkpoint functionality, the Heimdall Bridge supports smart contracts across multiple blockchains, creating possibilities for decentralized finance and other use cases for



MaalChain. Its proof-of-burn mechanism further enhances security and efficiency when withdrawing assets from the MaalChain.

Consensus and Block Creation Process

The Maal consensus process follows a round-robin iteration where a proposer is selected to lead the consensus, and validators are chosen based on their voting power. The proposal involves multiple stages, including "propose," where the proposer communicates the proposed block to peers. Validators sign votes for blocks, with a 2/3 majority "commit" signifying that the block is committed. The protocol consists of propose, pre-vote, and pre-commit steps, with commit and new height as special steps. Each step takes one-third of the total time allocated for the round, with each round lasting slightly longer than the previous one. The increase in duration helps the blockchain reach consensus in a partially synchronous environment, with timeouts and fallback mechanisms used to prevent the consensus process from stalling. The schematic of the validation process is below:

Blocks within Maal are created using validated transactions and specific structures. Merkle trees are used to hash validation and transaction hashes to produce root hashes, which are then used to compute the block hash. The Maal state hash, which is also a Merkle root hash,

represents the persistent account state external to Maal. The block hash in Maal is computed by hashing the header, validation, and transaction hashes together, resulting in a Merkle root hash. All transactions within a block must be valid, and sufficient signatures must be included in the validation to be valid in Maal. This approach ensures blockchain integrity and prevents unauthorized changes to transaction data and account state. Validators play a crucial role in ensuring the security and integrity of both Maal and BOR by proposing blocks, signing votes, and committing blocks to the blockchain.

Validators

MaalChain's functionality relies on a group of validators. The MaalChain Validator DAO is designed to enforce MaalChain's governance while empowering validators to actively participate in MaalChain's development and governance. In return for their services, validators receive rewards such as transaction fees and vesting pool reward, all of which are distributed through the DAO.

MaalChain operates on a Proof of Stake (PoS) consensus mechanism, which necessitates validators to undertake pivotal responsibilities, serving as both block producers and transaction verifiers. To ensure the seamless operation of MaalChain, certain minimum technical specifications are required for a MaalChain validator (node) that are:

Type	Value	Influenced by
CPU	4 cores	Number of JSON-RPC queries Size of the blockchain state Block gas limit Block time
RAM	16 GB	Number of JSON-RPC queries Size of the blockchain state Block gas limit
Disk	1 TB SSD	Size of the blockchain state

Setting up and managing a validator node can prove to be a complex and time-consuming endeavor, deterring some individuals from participating. In response to this challenge, Maal aims to ease the burden on its validators by offering a dedicated node service. Maal will establish, configure, and oversee this node on behalf of the validator. The node will adhere to the following specifications, with Maal taking full responsibility for its operation and

maintenance. Furthermore, all costs associated with operating and sustaining these validator nodes will be absorbed by the Maal treasury, thereby alleviating financial obligations for the validators in this regard. Allowing validators through the DAO to have control over validator rewards without having to worry about running a node themselves.

Validator Tiers

A validator is obliged to adhere to the MaalChain DAO Validator rules, which encompass principles of transparency, anti-monopoly, facilitation, and security. Entities must successfully complete a KYC verification process to qualify as validators. Only 150 MaalChain validator NFTs will be created and distributed among eligible entities. The purchase price of Maal coins for each validator tier prior to the listing of Maal coins is detailed in the table below; thereafter, Maal coin prices will be determined by prevailing market rates.

Ranking of Validators and Qualifications in Three Tiers

Tier	Number of Maal Coins	Pre-Listing Price of Maal Coin	Max No of validators
1	14,285,714	$0.035	10
2	2,500,000	$0.040	40
3.	222,222	$0.045	100
Total			150

Within each tier, validators will be ranked based on the number of Maal coins vested on MaalChain. Importantly, the tier assignment, which is determined at the time of receiving a NFT Validator, remains unchanged; validators will not experience tier changes due to fluctuations in their coin holdings. This approach ensures stability and transparency in tier assignments within the MaalChain ecosystem.

The validator occupying the highest tier and ranking, with the greatest vesting, will wield the most significant influence over DAO governance and, consequently, MaalChain itself. DAO validator membership and associated rights are verified through ownership of a MaalChain validator NFT.

A validator has the option to possess more Maal coins than the minimum requirement for the validator tier vesting. Owning and vesting more Maal coins will enhance the validators ranking

within the tier but will not result in the validator moving to a higher tier. To transition to a higher tier, the validator can choose to apply for a higher tier DAO Validator NFT or acquire an NFT from another validator according to prevailing ownership transfer regulations. It's important to note that specific government organizations or religious institutions may be granted top-ranking positions within their respective qualifying tiers to encourage active engagement and endorsement of the Maal ecosystem.

As an example, consider an individual that obtains a tier III NFT Validator by vesting 222,222 Maal coins (subject to KYC verification approval) within the Maal Validator DAO, they have the option to enhance their vesting by acquiring an additional 2,277,778 Maal coins, resulting in a total vesting of 2,500,000 Maal coins. However, despite now having a vesting equivalent to that of a tier II validator, they will not automatically move up to tier II status. Their status will remain within tier III. Nonetheless, their ranking within tier III will improve, reflecting their increased vesting. If the vesting of 2,500,000 Maal coins exceeds that of the other 99 validators within tier III, they would attain the top-ranking position within that tier, becoming the rank 1 validator.

DAO validator NFTs become eligible for transfer five years after their initial issue and vesting date. Subsequently, these NFT validators can be offered for sale to other parties. It is mandatory that, before selling, a MaalChain DAO validator must first be offered to other NFT validators before making it available on the open market. Furthermore, a prospective buyer must successfully pass KYC verification before an NFT transfer can take place.

In situations where an NFT owner encounters difficulties in selling their NFT to another validator, they retain the option to liquidate their Maal coins at the prevailing market rate. During this period, the NFT temporarily falls under the control of the DAO, ensuring continuity and network stability until a suitable sales opportunity arises.

To prevent any single entity from exerting undue influence over the DAO, individuals are restricted from concurrently holding more than two validator NFTs. However, there are no restrictions on validators vesting additional Maal coins.

DAO Governance

The MaalChain Validator DAO relies on smart contracts deployed on the MaalChain for executing governance functions. These smart contracts have the responsibility of minting and distributing Maal Validator NFTs to their respective owners, overseeing the management of

proposals and the voting mechanisms for governance decisions, as well as calculating and distributing profit-sharing revenue to validator wallets. Additionally, they are tasked with managing dispute resolution within the DAO.

The DAO allows validators to participate in voting procedures pertaining to the ongoing development and governance of the MaalChain. Maal validator NFTs are voting tokens used on the DAO for voting on proposals. These proposals encompass fundamental aspects such as network upgrades, modifications to consensus rules, and other pivotal determinations.

Proposals are subject to predefined quorum and a majority vote threshold, ensuring that only changes with broad support are implemented. The degree of voting influence given to each validator corresponds to their assigned tier and ranking, guaranteeing that those with the highest stakes wield more voting power. This system ensures fairness and proportionality in the voting process. The voting system is structured with an aggregate of 1,000 votes as follows:

- Tier 1 validators have 50 votes each for each 10 validator NFT memberships, contributing to an aggregate weightage of 500 votes.
- Tier 2 validators have 10 votes each, apportioned across 40 validator NFT memberships, contributing to an aggregate weightage of 400 votes.
- Tier 3 validators have 1 vote for each of their 100 validator NFT memberships, contributing to an aggregate weightage of 100 votes.

In situations where a DAO vote proposal receives an equal number of votes in favor and against, the ultimate decision will be determined by assessing the proportional Maal coin holdings of both proponents and opponents of the proposal.

DAO Revenue Sharing

One of the central functions within the MaalChain Validator DAO pertains to profit sharing. The DAO accrues profit sharing through transaction fees originating from the Maal income generating ecosystem that includes MaalChain, RamzSwap, PanSea NFT Marketplace. This profit sharing will be collected in a DAO controlled treasury wallet and disbursed semi-annually among the 150 validators, with distribution based on their respective tiers and coin holdings. The DAO distribution process is automated through smart contracts deployed on the MaalChain, ensuring transparency and equity.

It is important to note that all validators share a collective risk, as there is an initial waiting period of 12 to 18 months from the commencement of the Maal income generating ecosystem before revenue becomes available for distribution. This timeline aligns with the successful precedents set by other blockchain networks.

Example of DAO Validator Profit Sharing		
MaalChain transaction Fee	$0.05	
MaalChain transactions	500,000,000	
Gross Revenue	$25,000,000	
Deduct operating expenses 40% max.	($10,000,000)	
EBITDA	$15,000,000	
Validator Pool shared risk and profit @21%	$3,150,000	
Distribution Ratio and Profit Share for Tier 1	50%	$1,575,000
Distribution Ratio and Profit Share for Tier 2	40%	$1,260,000
Distribution Ratio and Profit Share for Tier 3	10%	$315,000

DAO Security

To ensure the security and integrity of the MaalChain Validator DAO, a comprehensive set of measures will be put into effect, including:

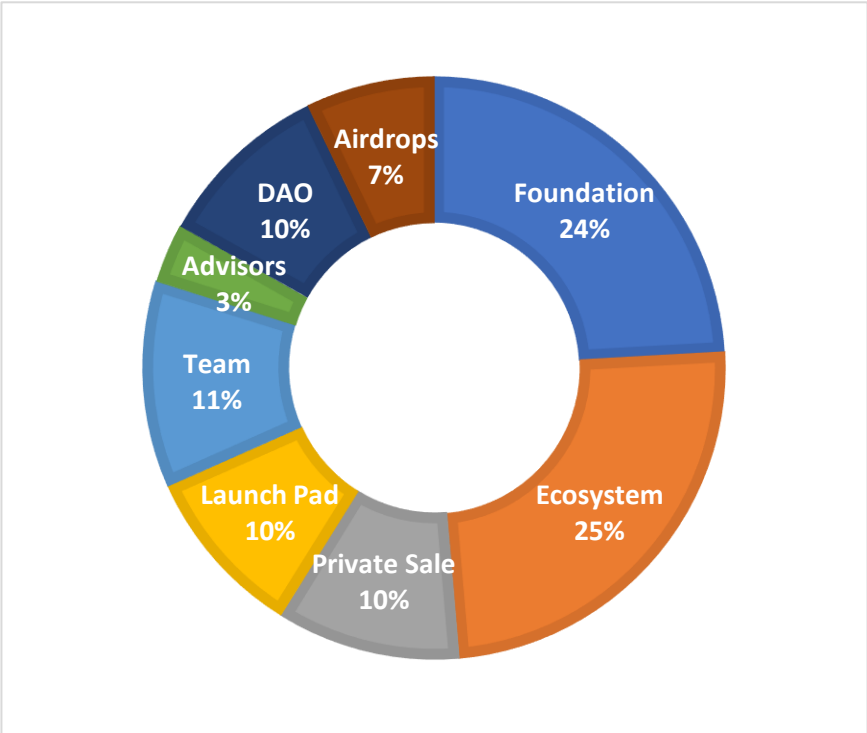
- Employing multi-signature wallets for significant transactions and fund management.
- Conducting regular security audits of the smart contracts, carried out by independent experts.
- Installing a robust dispute resolution mechanism to effectively handle conflicts or disputes that might arise within the DAO.
- Maintaining a transparent and publicly accessible ledger, documenting all DAO activities and decisions on the MaalChain blockchain.

Tokenomics

MaalChain’s tokenomics encompasses the factors influencing Maal coin's utility, value, and overall behavior within the MaalChain ecosystem. The tokenomics comprehensive design ensures the long-term success and sustainability of MaalChain while maximizing the value of Maal coin and deflationary. The total supply of Maal coins is limited to 10 billion.

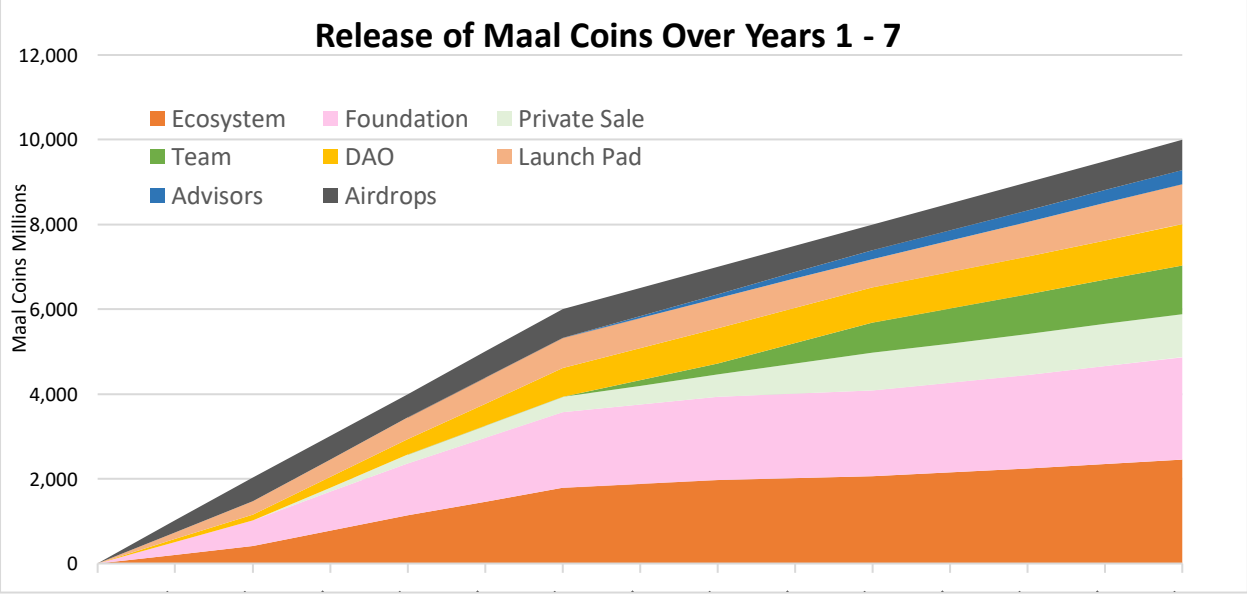
Allocation

The Maal coin tokenomics allocation strategy presents numerous advantages. It provides long-term support for the appreciation of Maal coin prices by offering incentives to participants, kickstarting blockchain activity, and guaranteeing a sustained commitment from stakeholders through automatic vesting. Furthermore, it stimulates the growth and adoption of the ecosystem, ultimately bolstering the blockchain's success and sustainability. The allocation of Maal coins is depicted in the chart below.



- Ecosystem (25%) allocation to validators and the broader ecosystem incentivizes network security and participation. Validators play a crucial role in maintaining the integrity of the blockchain, and this allocation ensures their ongoing commitment. Validators Maal coins are always vested.
- Foundation (24%) substantial coin allocation provides long-term financial support for the development, maintenance, and growth of the Maal blockchain ecosystem. It ensures that resources are available for ongoing innovation and sustainability. Maal coins are vested for an initial term of five years with subsequent terms dependent on market conditions.

- Team (11%) is an incentive for talent recruitment and retention. It aligns team members' interests with the project's long-term success, ensuring their dedication and commitment. Maal coins are vested for five years.
- DAO (10%) to the community via DAO participation promotes MaalChain ecosystem development and network security. It ensures that the blockchain has a robust and active validator community. Maal coins are vested for initial term of five years and thereafter depending on decision of DAO governance community.
- Launch Pad (10%) to incentivize early adopters to create dApps and launch tokens and NFTs. It jumpstarts MaalChain activity and liquidity, driving initial growth and ecosystem expansion. Maal coins are vested for an initial term of five years.
- Private Sale (10%) generate early capital and support from strategic investors. These funds will be channelled into MaalChain ecosystem development, providing a solid financial support for MaalChain ecosystem development and improvement. Maal coins are vested during a five-year term.
- Airdrops (7%) distribution used for marketing, generate initial interest, engagement, and adoption of the MaalChain to attract a diverse and active user base.
- Advisors (3%) receive Maal coins to encourage their active involvement and contributions to the MaalChain ecosystem, enhancing its effectiveness and attract and grow adoption. Maal coins are vested for five years.

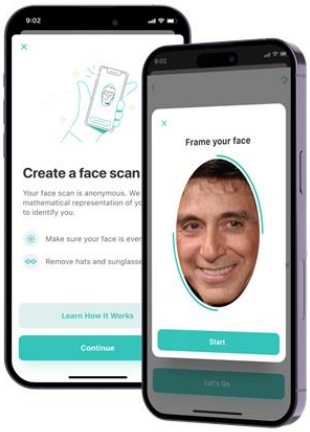


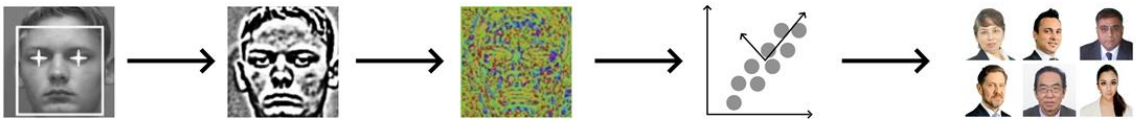
Concept of Identity

Skepticism within the blockchain industry arises from challenges related to identifying wallet address owners and the inability to trace fund origins. MaalChain, in conjunction with its approved wallets, effectively mitigates these concerns by introducing the capability to recover digital assets through biometric facial recognition, eliminating the need for cumbersome seed phrases. This is made possible through the implementation of the Concept-of-Identity.

The Concept-of-Identity on MaalChain not only offers security to wallet addresses but can facilitate ownership identification of wallets for specific applications and allow private dApps to be combined within a public DLT blockchain. This provides an avenue to achieve regulatory compliance necessary for MaalChain adoption by central banks, financial institutions, and government organizations to name a few where the owner identity of a wallet address is necessary. Additionally, providing the opportunity to ensure Shariah compliance for dApps and supply chain management.

- **Most secure wallet for all Digital Assets.**
- **NPC. No more Lengthy seed phases or private keys.**
- **No additional hardware required.**
- **Face scan and biometric authentication is all you need to recover.**
- **Centralized. Keep all your decentralized digital assets, one wallet.**





Conclusion

MaalChain represents a significant paradigm shift in blockchain technology and ecosystems, offering solutions that enable regulatory compliance while upholding principles such as transparency, anti-monopoly, facilitation, and security. MaalChain champions fairness and opportunity within its ecosystem, serving as a catalyst for a new era of blockchain excellence.

References

https://github.com/0xPolygon/polygon-edge

https://github.com/tendermint/tendermint

https://kesavi-web-solutions.gitbook.io/mal-blockchain-validator-system

https://cryptoforinnovation.org/what-is-polygon/

Merkle, R. C. (1998). “A digital Signature based on a Conventional Encryption Function”. Springer-Verlag.