Engram Network

Real World Sector Decentralized Blockchain Platform

White paper Version: 1.0

Engram Network

A product of PT. Engram Network Blockchain Technology

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1. Introduction

1.1 Vision

Engram network is an ambitious and enthusiastic blockchain project dedicated to the establishment of the most supportive blockchain protocol that drives web3 and blockchain implementation through real world collaborative stakeholders adoptions.Engram Network developed Engram Chain that offers public blockchain support of high throughput, high scalability, affordable and high availability for all Decentralized Applications (DApps) in the Engram Network ecosystem.

1.2 Background

The blockchain revolution has been an attractive phenomenon that attracts lots of eyes from different places in this world. Blockchain and smart contracts are one of the most revolutionary technologies in the early 21st century. But there are gaps that prevent everyone from adopting it, such as network volatility, failed investment and so on. However, people don't realize that blockchain isn't always about the crypto investment that sometimes goes wrong. Thus, we are building a new layer 1 blockchain technology, collecting the potential utilities of it and collaborating with a real-world sector collaborative group called '*hexa helix stake-holders*' (6 pillars; Academics, Business, Community, Government, Media & Investment) to make the blockchain network for real world-integration come true.

In our thesis, we believe that the collaborative ideas from decentralized communities and real sector entities will become a huge economic circle that wins everyone who participates. The expected result from engram is the empowerment of those pillars for adopting/joining the blockchain technology that improves their growth, well-being, human rights and values.

Ethereum based developers finally could enjoy building on a scalable & affordable network with almost-same quality as Ethereum for solving world problems with smart contract technology. Real-world sector refers to the entities called Hexa-helix stakeholders. They are academics, business players, communities, governments, media companies and investors. By inviting them to be on-chain, integrating each other and building use cases based on the real problems they need to solve using blockchain, we believe the movement will create a huge impact for the larger community.

1.3 History

August, 2023	October, 2023	November, 2023	December, 2023	January, 2024
Engram Network Ideations, Team & Volunteer Recruitment	Engram Chain Testnet launch	Smart Contract Test by Engram Community	Company Establishment	Proof of stake contracts for incentives mechanism

Engram Network was established in August 2023 in Bandung with its core product, a public blockchain protocol forked from Ethereum Network. Engram Network is a bootstrapped startup that will go mainnet and support developers and institutions to adopt blockchain technology by becoming a dapps issuers or network validator. Engram Network roadmap involves the development of the public chain, dapps, and driven by its community.

1.4 Terminology

Address

In Engram, an address is a 20-byte identifier assigned to each participant (user, contract, or decentralized application) on the network. It is used for sending and receiving Engram (GRAM) or interacting with smart contracts.

Keystore

A keystore is a file that securely stores private keys. It is often encrypted with a password, and users can import it into wallets to access their Engram accounts.

ABI

An application binary interface (ABI) is a set of rules defining how to encode and decode data in a format that contracts on the Engram blockchain can understand. It specifies the methods that a smart contract exposes, along with their inputs and outputs.

API

API (Application Programming Interface) in the Engram refers to interfaces that allow developers to interact with the Engram blockchain. It enables the

development of applications, including wallets, decentralized applications (DApps), and other services that leverage Engram's capabilities.

Block

Blocks are linked together in a chain, and each block contains a unique identifier (hash) along with a reference to the previous block. This chaining ensures the security and integrity of the entire Engram blockchain.

Block Reward

In a Proof-of-Stake (PoS) consensus mechanism, the concept of a block reward remains, but it operates differently than in traditional Proof-of-Work (PoW) systems. Instead of miners competing to solve complex mathematical puzzles to validate transactions and create new blocks, PoS relies on validators who are chosen to create new blocks based on the amount of cryptocurrency they hold and are willing to "stake" as collateral.

gRPC

gRPC[2] (gRPC Remote Procedure Calls) is an open source remote procedure call (RPC) system initially developed at Google. It uses HTTP/2 for transport, Protocol Buffers as the interface description language, and provides features such as authentication, bidirectional streaming and flow control, blocking or nonblocking bindings, and cancellation and timeouts.

Public Test Network (Testnet)

A version of the network running in a single-node configuration. Developers can connect and test features without worrying about the economic loss. Testnet tokens have no value and anyone can request more from the public faucet.

RPC

Remote Procedure Call, in Engram Blockchain, refers to a communication protocol that allows a program or application to request and execute a procedure or function on a remote server within the engram network. RPC serves as a bridge for external applications to interact with and retrieve information from the blockchain, Engram itself has several RPCs that are supported by Load Balancer so that the network remains stable despite having as many requests.

Scalability

Scalability is a feature of the Engram Protocol. It is the ability of a system,

network, or process to handle a growing amount of work or its potential to be enlarged to accommodate growth.

Throughput

Throughput refers to the system's capacity to process and execute transactions efficiently. Throughput is often measured in TPS (Transactions Per Second), indicating how many transactions the network can handle in a given time frame. Engram Tokio (Public Testnet) can accommodate up to 520 tx/1 blocks.

Timestamp

The approximate time of block production is recorded as Unix timestamp, which is the number of milliseconds that have elapsed since 00:00:00 01 Jan 1970 UTC.

ENRC-20

A standard of crypto token on Engram Protocol. Certain rules and interfaces are required to follow when holding an initial coin offering on Engram blockchain.

2. Architecture

2.1 Core

Engram core layer involves several modules, i.e. full nodes and achieve nodes, RPC endpoint and Consensus endpoint API. Engram chain supports smart contracts from Solidity language and is integrated with Ethereum Virtual Machine dapps automations like Thirdweb to meet the mass adoption scalability requirements.

2.2 Storage

Engram Chain was designed as a distributed storage protocol consisting of virtual storage of EVM codes, Account Storages and Machine State that involves program counter, gas available, stack and memory. The storage is backed up by hundreds of validators from diversified cloud systems.

2.3 Decentralized Application

Programmers can code diversified decentralized apps on Engram Network by writing a solidity contract and executing it with GRAM coin as gas fee on the network.

2.4 Engram Network Virtual Machine (ENVM)

The ENVM is a lightweight, Turing complete virtual machine developed for the Engram chain ecosystem. The ENVM connects seamlessly with the existing development ecosystem to provide millions of global developers using the popular programming language for smart contracts like Solidity.

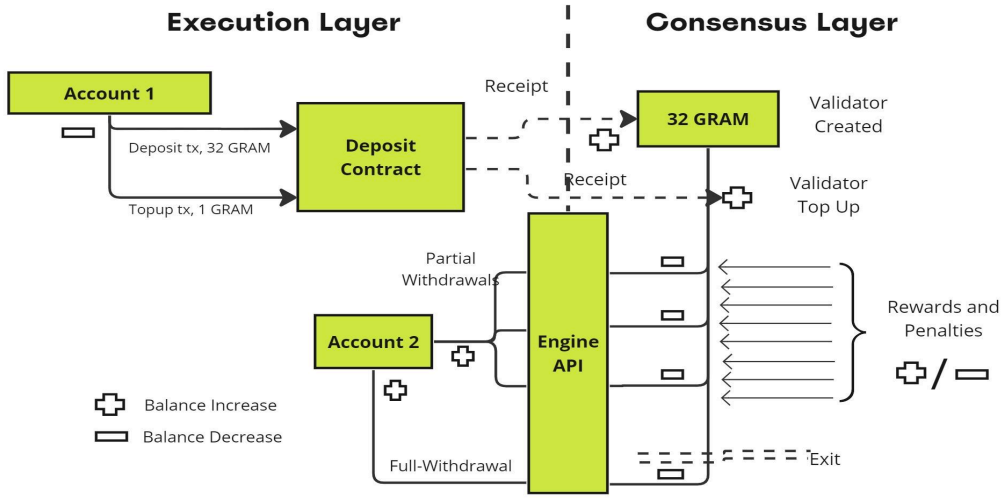
2.5 Engram Proof of Stake (PoS)

Engram Chain supports all network validators by introducing proof of stake programs. Any validator that successfully deposits on a staking contract while validating the transactions will receive our protocol reward and transaction tips from network users. The rewards are calculated based on the amount of GRAM coin staked on the staking contract using this formula.

$$\textbf{PoS Rewards} = \frac{\text{Total Coin Staked}}{\text{All Staked Coins}} \times \text{APY \%}$$

In addition, validators also will receive tips from every block validated by them as tips for every transaction stored on the block.

Below are the staking reward system scheme for Engram validator to earn by staking program:



Validators can use the recommended VPs with these specifications;

Node Type	CPU	Memory	Data Disk
Archive Node	2 CPUs	4 GB Memory	100+ GB Data Disk
Snap Node	4 CPUs	8 GB Memory	300+ GB Data Disk
Full Node	8 CPUs	16 GB Memory	500+ GB Data Disk

3. Consensus

3.1 Proof of Stake (PoS)

Engram Chain is adopting a Proof of Stake consensus mechanism, the same proof of stake contract used by Ethereum Beaconchain. In the PoS systems, transactions broadcast through the network are grouped into a recent block that needs to be validated by validators in real time. The confirmation process involves hashing transactions using cryptographic algorithms.

3.2. Staking Policy

The staking program will help our public Blockchain protocol to be safer and more resilient. We invite institutions, companies to join and bring their ecosystem on our chain. The staking policy is almost the same with Ethereum Staking. The minimum balance is 32 GRAM coins and there will be rewards for honest validators from our protocol as well as the penalty for misbehaving nodes.

4. Accounts

4.1 Types

Engram chain users can create 2 kinds of accounts. They are externally owned accounts (EOA) and Verified Smart Contract accounts. Both can be tracked from the block explore

a. **Externally Owned Accounts (EOA) Address**
   As an EOA, the state simply stores the account's balance in EVM and a sequence number is used to prevent transaction replay attacks. On the other hand, it stores the contract's code and its storage in a key-value database.

b. Smart Contract Account

A smart contract account is a contract that interacts with others on behalf of the owner. Celo provides an open-source version called the meta-transaction wallet (MTW). Ownership is typically assigned to an Externally Owned Account (EOA), which authorizes transactions by signing a meta-transaction. The smart contract account acts as the primary account, with the EOA controlling it.

Certain accounts are distinctly identified with tags on the block explorer. These tags serve as clear markers, enabling users to readily discern the account owners or the specific purposes associated with each account.

4.2 Wallet Creation

Engram chain is part of the EVM based blockchains family. Engram chain users are able to create new wallets using multichain wallet apps like Metamask browser extension, Trust Wallet App or others. Then connect it with Engram Chain configuration or using Chain List app from.

4.3 Smart Contract Account Verification

Smart contract account verification is a way to prove that the contract is verified by the system. To start verification, developers need to write smart contracts in solidity, recompile it, then make sure that it matches with other chains' contract's bytecode. The process is automated and can be seen from verified contracts in the block explorer.

5. Engram Network Virtual Machine (ENVM)

5.1 Introduction

Engram Virtual Machine is a lightweight, Turing complete virtual machine developed for the Engram Chain ecosystem. Its goal is to provide a custom-built blockchain system that is efficient, convenient, stable, secure and scalable.

Engram Virtual Machine initially forked from Ethereum Virtual Machine layer 1 blockchain (Ethereum Beaconchain) and can connect seamlessly with the existing solidity smart contract development ecosystem. Based on that, Engram Virtual Machine additionally supports PoS consensus.

5.2. Performance

The platform emphasizes low costs, enabling the creation of smart contracts at a

relatively inexpensive rate, with detailed transaction fee tracking available in the block explorer.

Lightweight Architecture

ENVM adopts a lightweight architecture with the aim of reducing resource consumption to guarantee system performance.

Robust

Engram Coin (GRAM) transfers, token transfers and smart contract deployment can only be executed by costing Engram coin balance. A block in Engram can contain ~1-600 transactions.

High Compatibility

ENVM is compatible with EVM. Thereby, all smart contracts on EVM are executable on ENVM.

Low Cost

Creating smart contracts on ENVM is relatively cheap as a 0.001 GRAM coin. The transaction will cost ~ 0.000020 GRAM coins. All transaction fee details can be tracked in the block explorer.

6. Smart Contract

6.1 Introduction

Smart contracts are simply programs stored on a blockchain that run when predetermined conditions are met. They typically are used to automate the execution of an agreement so that all participants can be immediately certain of the outcome, without any intermediary's involvement or time loss. Smart contract defines the rules, reward and penalties for certain transactions. Smart contract helps automate the fund distributions, asset tokenizations, and others. Engram Smart Contracts commonly written in these formats; fungible tokens (ERC20), non fungible tokens (NFT/ERC721), editions (ERC1155).

6.2 Transaction Gas Fee Obligation

The gas fee is a fee paid by network users based on the gas rate of the network in the day. Gas fees are paid in Engram Coin (GRAM) and denominated in Gwei. Each transaction will cost approximately 0.000315 GRAM coins.

6.3. Most Common Smart Contract Formats

ERC-20 (fungible Tokens)

In the Engram Network, each account can issue tokens at the expense ~ 0.0002 of GRAM coin. To issue tokens, the issuer needs to specify a token name, the total supply, token info, maximum supply, and etc.

ERC-721 (Non Fungible Tokens/NFTs)

In the Engram Network, each account can issue an NFT at the expense of~ 0.0002 GRAM coins. To issue the NFT, the issuer needs to specify an Image of the coin that has been stored on the decentralized storage (IPFS) and then mint it on the network with a specific ID.

ERC-1155 (NFT Edition)

In the Engram Network, each account can issue an edition token at the expense of ~ 0.0002 GRAM coins. Almost same with NFTs, to issue an edition, the issuer needs to select the image to be hosted on IPFS then decide the number of editions copies.

7. Token/Coin

7.1 Governance token (Engram Coin)

Engram Coin (GRAM) is the only digital oil working on the Engram Chain ecosystem. GRAM coin has limited supply, and everyone only can get it through several methods, such as; buying from Engram Labs as institutional validators, getting rewarded for finishing the community tasks, running Engram Chain Validator nodes, ICO sales and from upcoming official exchange partners.

GRAM has several differences with Ethereum' ETHs;

- GRAM supplies are limited and sustainable.
- All GRAM supplies are minted when the genesis block is started.
- GRAM isn't created to be burned, as a commodity GRAM is rewarded for honest and credible validators annually from reward-pool address.

GRAM is intended to be a new oil of the ecosystem, store of values, smart contracts fuel, and incentives for all network participants. Furthermore, Engram Chain will be an open-source, fully transparent, publicly auditable, permissionless and on-chain.

7.2 Coin utility

Engram coin has lots of utility especially on the Engram Chain itself.

Engram Coin utility	Case Sample
1. Ecosystem fuel	Everytime John makes a transaction on the Engram chain he will need to prepare a GRAM coin as a fee.
2. Smart contract deployment fee	Everytime a developer deploy a smart contract on Engram he will also need to prepare GRAM coin as a fee
3. Staking Program for Validators	Network Validators who also stake will get incentive from Engram protocol in GRAM coin.
4. Community Incentives	Communities who can contribute in GRAM coins will also gain from our program incentives.
5. B2b Partnership Subsidies	Valuable entities that want to join validating Engram coins will receive GRAM coins from our protocol in exchange with their ecosystem resources.

8. APIs

Engram chain has several API documentation for blockchain data. Developers can call Engram APIs by following the codes provided in the block explorer rest APIs session.

8.1 Execution APIs

Message format and encoding notation used by this specification are inherited from Ethereum JSON-RPC Specification.

Client Engram Execution must expose Engine API at a port independent from JSON-RPC API. The default port for the Engine API is 8551. The Engine API is exposed under the engine namespace. To facilitate an Engine API consumer to access state

and logs (e.g PoS Deposit) through the same connection, the client must also expose the following subset of eth methods.

- eth_blockNumber
- eth_call
- eth_chainId
- eth_getCode
- eth_getBlockByHash
- eth_getBlockByNumber
- eth_getLogs
- eth_sendRawTransaction
- eth_syncing

Authentication

Engine API uses JWT authentication enabled by default. JWT authentication is specified in Authentication documents.

Paris Engine

This structure maps on the ExecutionPayloadAPI of the beacon chain spec. The fields are encoded as follows:

- parentHash: DATA, 32 Bytes
- feeRecipient: DATA, 20 Bytes
- stateRoot: DATA, 32 Bytes
- receiptsRoot: DATA, 32 Bytes
- logsBloom: DATA, 256 Bytes
- prevRandao: DATA, 32 Bytes
- blockNumber: QUANTITY, 64 Bits
- gasLimit: QUANTITY, 64 Bits
- gasUsed: QUANTITY, 64 Bits
- timestamp: QUANTITY, 64 Bits
- extraData: DATA, 0 to 32 Bytes
- baseFeePerGas: QUANTITY, 256 Bits
- blockHash: DATA, 32 Bytes
- transactions: Array of DATA - Array of transaction objects, each object is a byte list (DATA) representing TransactionType || TransactionPayload or LegacyTransaction as defined in EIP-2718

ForkChoiceStateV1

This structure encapsulates the fork choice state. The fields are encoded as follows:

- `headBlockHash`: DATA, 32 Bytes - block hash of the head of the canonical chain
- `safeBlockHash`: DATA, 32 Bytes - the "safe" block hash of the canonical chain under certain synchrony and honesty assumptions. The value must be either equal to or an ancestor of `headBlockHash`.
- finalizedBlockHash: DATA, 32 Bytes - block hash of the most recent finalized block.

Note: safeBlockHash and finalizedBlockHash fields are allowed to have `0x0000000000000000000000000000000000000000000000000000000000000000` value unless transition block is finalized.

Specification

1. Execution Layer client software must respond with configurable setting values that are set according to the Client software configuration section of EIP-3675.
2. Execution Layer client software should surface an error to the user if local configuration settings mismatch corresponding values received in the call of this method, with exception for terminalBlockNumber value.
3. Consensus Layer client software should surface an error to the user if local configuration settings mismatch corresponding values obtained from the response to the call of this method.
4. Consensus Layer client software should poll this endpoint every 60 seconds.
5. Execution Layer client software should surface an error to the user if it does not receive a request on this endpoint at least once every 120 seconds.
6. Considering the absence of the `TERMINAL_BLOCK_NUMBER` setting, Consensus Layer client software MAY use 0 value for the terminalBlockNumber field in the input parameters of this call.
7. Considering the absence of the `TERMINAL_TOTAL_DIFFICULTY` value (i.e. when a value has not been decided), Consensus Layer and Execution Layer client software MUST use `115792089237316195423570985008687907853269984665640564039457584007913129638912` value (equal to `2**256-2**10`) for the `terminalTotalDifficulty` input parameter of this call.

8.2. Beacon API

At the core of this innovative solution is Lighthouse Client Beacon as standard, which is reinforced by our commitment to interoperability with other leading clients such as Prysm, Nimbus, Teku and Lodestar.

Lighthouse Non-Standard APIs

Lighthouse fully supports the standardization efforts at github.com/ethereum/beacon-APIs. However, sometimes development requires additional endpoints that shouldn't necessarily be defined as a broad-reaching standard. Such endpoints are placed behind the /lighthouse path. The endpoints behind the /lighthouse path are:

- Not intended to be stable.
- Not guaranteed to be safe.
- For testing and debugging purposes only.

Although we don't recommend that users rely on these endpoints, we document them briefly so they can be utilized by developers and researchers.

Lighthouse allows users to query the state of Ethereum consensus using web-standard, RESTful HTTP/JSON APIs. There are two APIs served by Lighthouse:

- Beacon Node API
- Validator Client API

All documentation about Beacon Chain [can be seen from Here]

8.2 Block Explorer APIs

In addition to the custom RPC endpoints, Block Explorer Engram RPC API supports 3 methods in the exact format specified for Ethereum nodes.

These methods are provided for your convenience. In general, custom RPC methods are recommended.
The following 2 methods are supported:

- eth_blockNumber
- eth_getBalance

9. Blockchain Network

9.1. Networks

Engram Network has both a Tokio testnet as well as a Mainnet. Developers may connect to the networks by deploying nodes, launching staking using Staking Launchpad or CLI, interacting via Thirdweb. The Engram nodes are distributed across the world using public clouds such as AWS, Digital Ocean or others.

9.2 Tools

Engram Network offers a suite of development tools for enabling users to utilize the network and build innovative DApps. Developers can use Ethereum Virtual Machine tools for writing smart contracts like Open Zeppelin, Remix, Truffle, Hardhat, Foundry or use automation tools like Thirdweb. To connect to the network automatically from any account, users can find Engram Chain from ethereum virtual machine based Chain List.

9.3 Protocol Resources

The Engram Network as a public blockchain protocol publishes all the resources of the protocol that can be seen by its community and investors transparently. The protocol resources include the funds from investment opportunities. Blockchain assets, NFTs from Engram and Engram sub-projects supported by Engram Labs.

10. Monetization

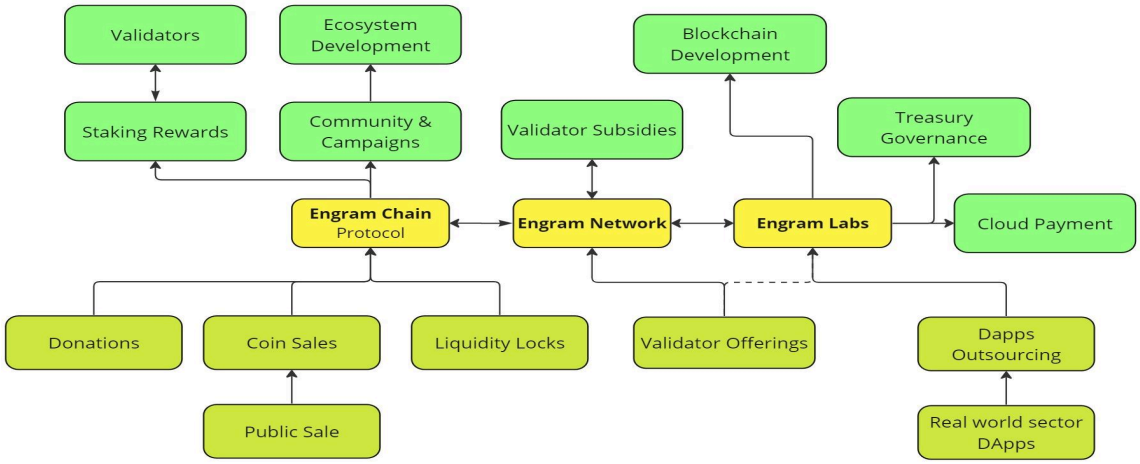
10.1. Strategy

The fundamental concept behind Engram Network is to create a supportive layer 1 blockchain protocol for solving real world use cases. By reducing the potential gaps for massive adoption, educating and collaborating with various stakeholders, the network flow will benefit everyone joining the network.

To get started using Engram Network we need to input the network configuration on a universal Ethereum Virtual Machine based network like Metamask. As you joined the network using your own non-custodial wallet address, you'll need a GRAM coin as a fuel for doing direct transactions, executing smart contracts, connecting to decentralized apps and others.

For any institutional partner who doesn't understand too much about how blockchain works, but wants to explore it anyway. They need to build a B2B mutual partnership with Engram Labs resulting the MoU that agreed the purchase of annual

gas fee subscription (same method as other SaaS), explore the potential network use cases catalog provided by Engram Labs, building their own on-chain apps using Third web SDK and agreed to integrate the entire ecosystem of entities to have engram wallet address and use it as they want.

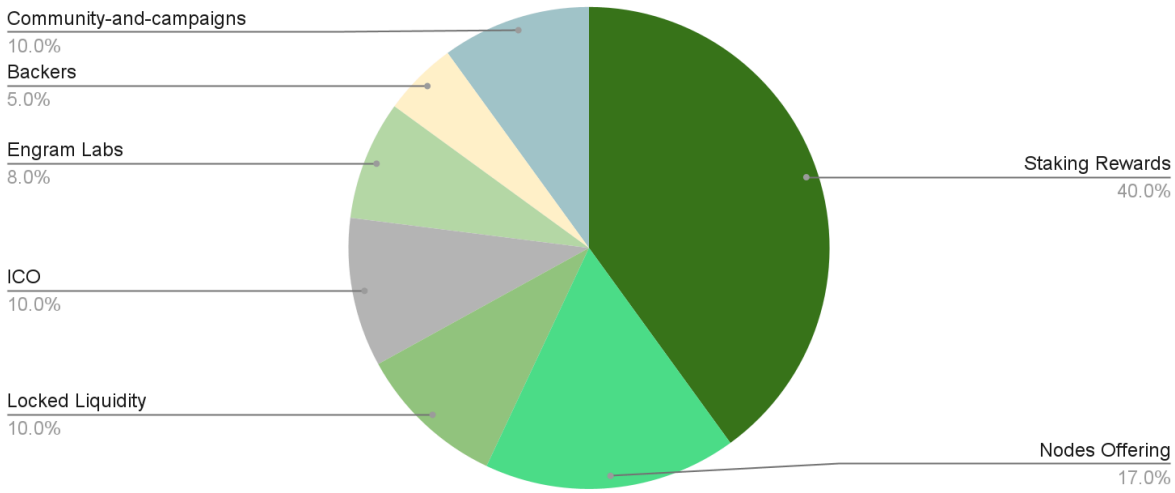


10.2. Partnerships Target

As we define a blockchain that supports real world smart contract adoptions, we aim to partner with companies, public companies, foundations, or government regulators, introduce blockchain technology deeper and build mutual benefit partnerships.

10.3. Tokenomics

Engram Network has several resources such as native coin of Engram Chain called GRAM coin which has limited supply and arranged allocations. Engram Coin supply is only 1,000,000,000 GRAM coins and the allocation is based on the project's mission.



Allocation	Percentages	Subtotal Coins	Unlock Rules
Proof of stake rewards	40%	400 M GRAM	7 % constant inflation that will be drained in ~40+ years
Nodes Offerings	17%	170 M GRAM	5 years ≤ more
Backers / Private round	5%	50 M GRAM	1 year cliff, 1 year monthly distribution
ICO	10%	100 M GRAM	100% unlock
Engram Labs	8%	80 M GRAM	6 months cliffs 2 years distribution
Locked liquidity	10%	100 M GRAM	5 years
Community, & campaigns	10 %	100 M GRAM	Quarterly unlock for 5 years

Further Description

a. **Proof of Stake Rewards**

Engram Chain has adopted a consensus mechanism called Proof of Stake which will annually distribute rewards in GRAM coins from the protocol automatically by joining a staking program and validating the nodes.

b. **Nodes Offering**

There are monthly/annual subscriptions that must be institutional validator partners. We'll assist them in joining the network, installing nodes, running the VMs through the cloud server we're using. The rate and amount of GRAM sold by Engram Labs through this program can be negotiated based on the MoU between two parties. There is no timeline of this offer and it can keep continuing even after the end of ICO round, to achieve more institutional blockchain partnership.

c. **Backers / Private Round**

The allocation for private investors and backers that want to help contribute in Engram Network operations to reach wider users.

d. **Public ICO (Initial Coin Offerings)**

The ICO allocations will be offered to end-to-end investors. The comparison between Nodes Offering, Private and Public ICO can be seen from the table below.

Allocations	**Rate / coin**	**Supply Allocation**	**Network**	**Purchase limit**	**Acceptable currency**
Nodes Offering	conditional for B2b partnership	170 M (17%)	Engram	TBA	TBA
Private	**$ 0.015**	**50 M coins (5% of total supply)**	**Ethereum & BNB Chain**	**$ 30,000 - 100,000**	**USDT/ETH**
ICO	$ 0.030	100 M coins (10% of total supply)	Ethereum	≥ $ 15	USDT/ETH

e. **Locked Liquidity**

The locked liquidity is an allocation made from the investment in a stable

coin that should be locked in a smart contract.

f. **Community & Campaign**
Community and campaign allocation is the allocations for our community activities, like AMA rewards, webinar, hackathon, ecosystem development, etc.

11. Project Roadmap

Q3 2023

- ❖ Project Introduction
- ❖ MVP Building
- ❖ Team recruitment.

Q4 2023

- ❖ Testnet Program
- ❖ Legal document

Q1 2024

- Dapps Building
- Community Program
- **Private Sale**
- Education Program

Q2 2024

- **ICO Sale**
- Dapps Launching
- Network Scaling

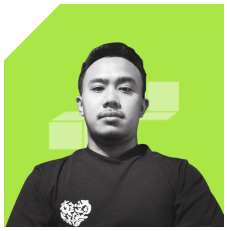
Q3 2024

- Mainnet
- **DEX/CEX Listing**

Q4 2024

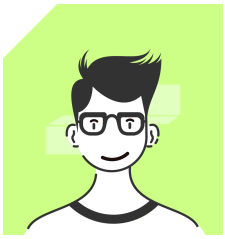
- Product Development
- Ecosystem Development

12. Team composition



M. Fathurridho

CEO



Avenbreaks

CTO

Mike Venturi

CBCO

Fitri Hardianti

COO

13. Conclusion

Engram Network is a blockchain protocol with an innovative blockchain solution for driving blockchain and smart contract adoptions using its public blockchain, Engram Chain. Engram Chain is a scalable, fast, decentralized and robust blockchain network compatible with EVM validated by decentralized validators from Web3 community and institutional validators that also will build decentralized applications and contribute to the Engram ecosystem.

In conclusion, Engram Network emerges as a transformative force in the blockchain space, poised to bridge the gap between the blockchain revolution and real-world industries. It offers a novel layer 1 blockchain technology that leverages Ethereum's proven open-source infrastructure to provide enhanced security, decentralization, speed, and scalability. By embracing a proof-of-stake consensus mechanism, Engram Network incentivizes participants to secure the network and actively engage in its operations, fostering a vibrant and self-sustaining ecosystem.

Engram Network's collaboration with 'hexahelix stakeholders,' representing academia, business, community, government, media, and investment sectors, is a visionary move. This alliance aims to harness the collective wisdom of both decentralized communities and established entities, creating a symbiotic relationship that fuels innovation and addresses real-world challenges through blockchain solutions. Engram's commitment to transparent and trustworthy

governance, overseen by coin holders and supported by the Engram Labs, instills confidence in its long-term viability and integrity.

In essence, Engram Network's vision of becoming a supportive blockchain protocol driving web3 and blockchain adoption through collaborative stakeholder involvement aligns with the evolving needs of the blockchain industry. Its mission to democratize blockchain technology and encourage mass participation resonates with the broader goal of realizing the full potential of blockchain in the real world. Engram's core values of collaboration, staying current, and fostering trust embody the principles that will guide its journey towards revolutionizing industries and transforming the blockchain landscape.