TEA PROJECT

TRUSTED EXECUTION & ATTESTATION

Elevating Decentralized Trusted Computing to a **T**

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Problems with existing blockchains and cloud computing

Traditional blockchains are slow...

Existing blockchains are decentralized but slow, which prevents applications from running at the speed of traditional cloud computing apps.

... and aren't fully decentralized

While dApps are built on the blockchain, many still require a host. They share the fundamental weakness that cloud computing apps have: centralization.

Cloud Computing? Still centralized and untrustable.

The cloud computing business model relies on monetizing user data; even though basic data security is in question, private data is held by tech giants who also have the ability to censor web users.

The TEA Project Combines the Best of Blockchain & Cloud Computing

Traditional Blockchain

- Decentralized but slow
- Consensus required because of Byzantine fault tolerance (BFT)

Cloud Computing

- Centralized.
- Can run rich apps/possibly censored
- Potential privacy breaches

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+ Rich Application

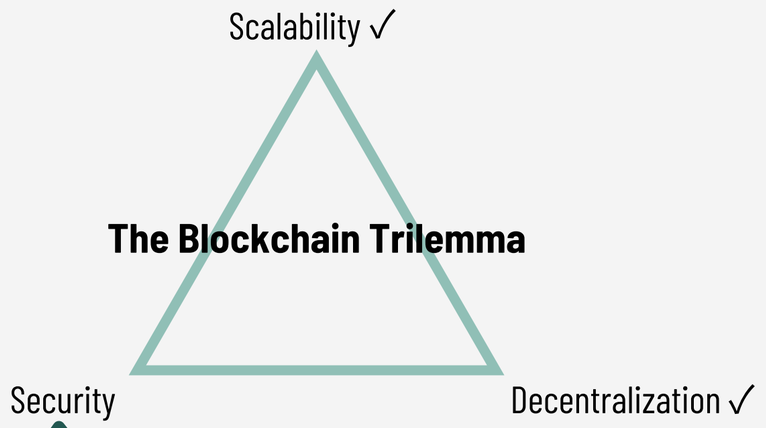
+ Decentralization

- Decentralized
- **Rich UX dApps run on layer-2 non-BFT consensus; layer-1 blockchain handles BFT**
- Runs rich apps at full speed + no censorship
- Privacy protected by TPM chip

The TEA Project's Two Layer Setup

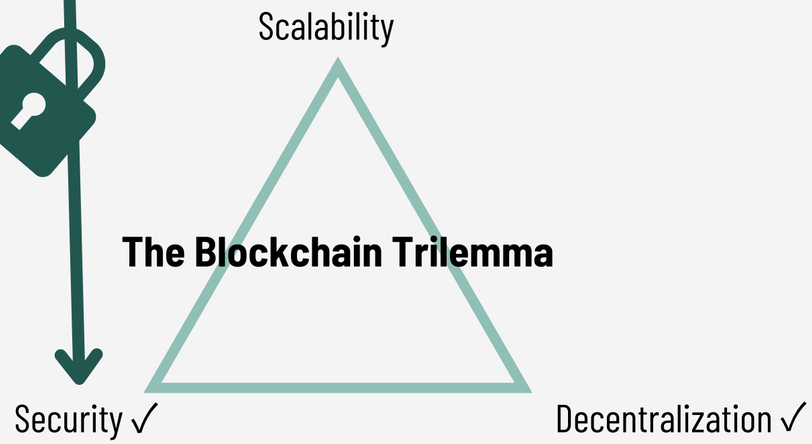
Layer 2

- Layer2 nodes (CML* nodes) only trust other CML with certificates issued by layer1. This allows them to ignore Byzantine faults and reach cloud computing performance and scale.
- Rich applications run on layer 2 decentralized nodes that have already gained trust from Layer 1.
- Programming logic and data are secured inside hardware protected enclaves.



Layer 1

- Layer1 nodes don't run application logic. They deal with Byzantine fault and issue certificates to layer 2 CMLs that pass validation.
- Polkadot PoA for consensus.
- Consensus on the verification result from Layer 2.
- Manages remote attestation & TEA token economy.
- Verifies blocks.



TEA Project Versus Competitors

	How Devs Onboard	Layer-1?	Miners	Decentralization
TEA Project	Easy onboarding using same 3-tier architecture	Runs as middleware layer to other chains (e.g. parachain)	Requirements (TPM / GPS) within reach of ordinary consumers	Openness to programming languages / diversity of miners
Competitor #1	New language + persistent memory (instead of databases)	Everything happens on its layer-1	Needs special hardware / RAM (2TB / 4TB)	Centralized through • miner infrastructure • Programming language
Competitor #2	Easy Docker deployment	Some partnerships (Polygon / Solana)	Unused datacenter capacity / consumers can deploy as Kubernetes clusters	Privacy of app data is up to the datacenter providers. Can't enforce that datacenter won't steal app data.

The TEA Project's Two Tokens

Stable coin: TEA

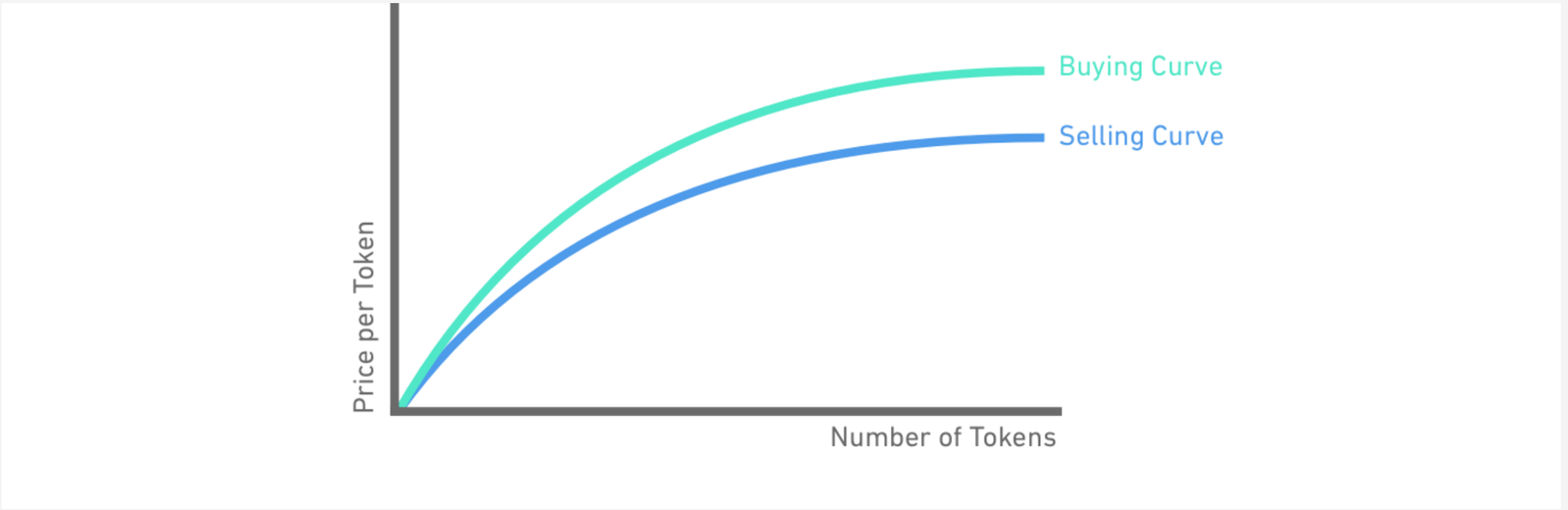
- Utility token. Stable coin pegged to computing cost, not fiat.
- Used as gas.
- Born from public service rewards and burnt by DAO when CML seeds are bought at auction.

NFT: Camellia (CML)

- A TEA mining node can only be activated by associating a Camellia NFT with it. CML functions as a mining license and credit record.
- Miners buy new Camellia seeds through open bidding and burning TEA.
- Camellia has a life cycle determined randomly via an algorithm.

Bonding Curve Token Sales for TApps

- TApp developers can issue TApp tokens on a bonding curve.
- Early adopters are rewarded for their investment as their TApp token price increases when more people buy the project's token on its bonding curve.



CML

- A CML are the rarest (10% of all CML) and when planted provide the infrastructure for our layer-2 state machine.
- B CML (30% of all CML) are the workhorses who when planted into mining nodes host the TApps on the layer-2 network.
- C CML (60% of all CML) are the most common and can be planted into mining nodes to perform public service tasks like remote attestation.

Genesis Block & Treasury

- 10 000 total CML in the genesis block.
- CML is completely allocated, with no airdrops and no amount set aside for the treasury.
- Our treasury is actually controlled by code. Code monitors how busy/idle the miners are on the network. New CML are issued & put up for auction if miner utilization passes a set threshold to put some slack back into the system.

VOUCHER RELEASE SCHEDULE

	TEA Project Community	TEA Project Team	SEED ROUND INVESTORS	A ROUND INVESTORS	PRIVATE SALE (parachain auction)
FROZEN SEED %	30	30	10	10	20
DEFROST SCHEDULE	• 2 month lockup • 5% per month for 20 months	• 2 month lockup • 5% per month for 20 months	• 10% immediately • 5% per month for 18 months	• 10% immediately • 5% per month for 18 months	• 20% unlocked at start of parachain lease • 80% linear vesting for duration of lease

FUNDING ROUNDS

HASHKEY Capital

Seed round: $1 million investment with $10 million valuation

Next round goal: $7 million investment with $70 million valuation

Hardware Support

The roadmap for supporting various Root of Trust (RoT) verification chains depends on the underlying hardware

Architecture	TEA Support	Technology + RoT Verification	Cloud IaaS for Rent?
Amazon Nitro	Completed	• Similar to TPM • Centralized cloud	✓
Raspberry Pi w. GPS & TPM	On roadmap	• TPM-Based • Decentralized	✗

Milestones

2019

- TEA Project starts in 2019
- Self funded until 2021

2020

- First milestone in Nov 2020: Released the AI image recognition demo running on simulator

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2021 Q2

- Second milestone ongoing in 2021
- Gluon wallet
- Web3 Foundation Open Grant
- Migrating TEA runtime to Amazon Nitro
- Seed round secured including investment from Hashkey

2021 Q3

- Preview 1 version launch
- Begin Go2Market strategy starting with miners' economy

2021 Q4

- Public mining in preview mode
- Rich dApps running on network
- Testnet starts

2022 Q1

- Testnet mining up to epoch 9
- TEA Party dApp released

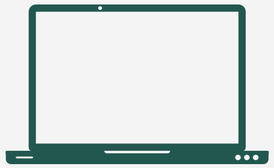
2022 Q2

- Mainnet starts
- TEA <-> ETH bridge operational
- Layer-1 Cumulus code integration in preparation for parachain auction

The 3-Phase Rollout

Phase 1:
Miners

- The TEA Project aims to build a healthy ecosystem by starting with the miners.
- Miners harvest TEA tokens from hardware mining with CML.
- Miners are able to exchange TEA in a liquid market with relative price stability.
- Miners can burn TEA to buy more CML.



Phase 2:
Developers

- Focus shifts to onboarding developers, including tech education & outreach on how to build on the TEA ecosystem.
- Hackathons / grant program released.
- SDK available.
- TApp store of rich dApps launched showcasing apps in the TEA ecosystem.
- Miners invest their TEA into TApp tokens which supports both early developers & TEA token price.

Phase 3:
Consumers

- Consumer outreach phase: now that rich TApps are available in the TApp store, the TApps are marketed to consumers.
- Positive feedback loop: more consumers enter ecosystem -> devs can see what apps consumers want -> devs focus on making TApps that meet consumer demand -> popular TApps financially reward both miners and developers.

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Run rich dApps on the blockchain at cloud speeds by leveraging silicon security and time.