

# **WHITE PAPER**

**V.1.1**

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## Executive Summary

The cryptocurrency market is still in progress, although it is one of the most difficult stages. Transaction processing time remains low, the benefits of mining are falling, and the proposed solutions to the problems of scaling and energy inefficiency are still far from realization.

These events are contrary to the well-established expectations that the economy will soon undergo a fundamental shift and become more decentralized. Blockchain enthusiasts have long hoped to see - and help build - a world in which cross-border transactions occur instantly and free of charge, where people can run their business without interference from banks and other authorities, and where transactions will not depend on trust between the parties.

Ethereum Tech is a new cryptocurrency that intends to bridge this gap between expectations and reality. Being a hard-fork of Ethereum, it will use the most advanced solutions offered for the world's second largest digital currency, while at the same time maintaining the ideal of decentralization. The project will combine technologies such as sharding, P2P asset swapping, dApp development tools that can be used with an initial level of programming. Starting with a PoW-based system, it will subsequently offer stable rewards for transaction validators through the introduction of Proof-of-Stake, while at the same time creating an optimal environment for deploying new assets.

# 1. Ethereum: current problems and solutions

## 1.1. Proof-of-Stake consensus algorithm

Proof-of-Work remains the main agreed-upon protocol used in the cryptocurrency space, mainly due to the fact that it is used by the two largest blockchains - bitcoins and Ethereum. However, PoW is extremely inefficient and underlies many of the problems faced by these distributed networks. At the same time, switching from PoW to Proof-of-Stake is a complex undertaking requiring significant resources and careful balancing.

Ethereum Tech is built as an advanced, fast, easy-to-use and highly decentralized system, and Proof-of-Stake clearly does not meet these goals. Thus, after the initial period when the platform will use PoW, the transition to PoS will be performed. Unlike Ethereum, which is likely to go through a long phase of partial testing (checking one block out of 100 using PoS), Ethereum Tech will perform a more decisive and confident transition. We firmly believe that the introduction of a revolutionary update in an extremely limited form can only destabilize the network, prolong discussions, create discord and ultimately make a complete transition impossible.

The concept of Proof-of-Stake is based on the fact that users put a significant amount of coins (as if “freezing” them so that they could not be spent), to be chosen as block validators, for which they are rewarded. This consistent algorithm has several important advantages over Proof-of-Work:

1. Energy efficiency. PoW-based blockchains are notoriously inefficient when it comes to electricity. Only bitcoin mining consumes 0.33% of global energy consumption.

2. Equitable distribution of awards. There are no block rewards in the Proof-of-Stake networks - they offer only transaction fees for validators. Although they are naturally lower than the standard unit remuneration in ETH or BTC, the long-term profits obtained are comparable to those received from PoW, since operating costs are very low.

3. Decentralization. Even if Tron, Bitcoin and Ethereum claim that they are decentralized, it is not. In itself, the creation of new coins is increasingly concentrated in the hands of large mining pools. Independent miners, without access to economies of scale, almost lost hope of competing with greater rights. Naturally, this is very far from the ideal of decentralization and equality. PoS systems are exactly the opposite: there are no mining farms, no economies of scale, and even the imposition of more coins than anyone else will never allow one validator to take over.

4. Security. It is often argued that PoW is safer than PoW, since breaking a blockchain will require a successful attack on 51% of all nodes, which seems impossible. However, be aware that for small projects that have just been launched, 51% of all nodes may be a small number. In fact, hacking into a smaller blockchain network can cost less than a thousand dollars. In this context, PoS offers equal protection to projects of any size, as block validators lose their deposits if they break the rules or act maliciously.

## 5. Stability

PoS-based cryptocurrency prices will remain more stable in the long run and will show steady growth, not uncontrollable volatility, which can be observed with bitcoins.

## 2. Technical features of the project

### 2.1. Platform for decentralized application development

Although the vast majority of new dApp applications are developed in Ethereum, Tron, EOS, this is far from the most effective solution due to the problems described in section 1. The ever-increasing number of dApp applications (most of which do not reach adoption and remain in the system as dead load ) creates congestion, and the entire system is subject to unpredictable changes.

To provide an alternative environment for startup blockchains, Ethereum Tech will present its own platform for developing new decentralized applications with a set of tools, including a side chain development kit and an extensive database of ready-made smart contracts, plug-and-play applications, and modules that allow you to simplify development applications that will be provided both for free and for a fee. Tech dApp platform will include both internal and external development tools that allow users to create a complete application with an attractive user interface and add native Android and iOS applications without returning to third-party services. There will be no rental fee for a smart contract, only a one-time deployment fee. However, the Ethereum Tech community will regularly delete unused smart contracts in sleep mode to release resources. The application can be "restored" from such a dream by a one-time payment of an additional fee. This will solve the problem that Ethereum, Tron, EOS has to pursue: a large number of applications eventually stop due to lack of interest or funding, but are never removed from the network.

The platform will support Ethereum Virtual Machine and Solidity; however, it is important to note that developers working in the Tech environment may also use other common languages, such as JavaScript, Python and new languages, including Vyper and Red. It will be relatively easy to transfer existing dApp applications from Ethereum, Tron, EOS to Ethereum Tech. On the Tech dApp platform, you can create both coins, and non-funded coins and tokens, and each new asset can be immediately added to the TechEx P2P exchange.

At the second stage of implementation, we plan to introduce a set of user-oriented functions that will be limited or will not have programming skills in accordance with the principles of zero-code movement. Even low-tech start-up founders will be able to create their own prototype with a functioning blockchain using drag and drop elements. In the second stage, side chains will also be presented for hosting individual dApp applications,

which will ensure that potential vulnerabilities of new applications do not cause stability problems, which solve the current problem. Mobile smart contract support will also be introduced.

## 2.2. Sharding

Scaling is perhaps the most acute problem blockchains face. With all their advantages - decentralization, immutability of records, low fees, etc. - the inability of networks such as Ethereum and Bitcoin to scale, threatens their entire future development. Indeed, while Visa processes 24,000 transactions per second, Ethereum currently can process only 25. This creates a long lag in transactions waiting for confirmation, and can sometimes stop the entire system, as happened in December 2017 at the peak of popularity. Cryptokitties. The scaling problem is not an unexpected event - it is a logical consequence of the structure of the network itself.

An ideal blockchain system should have three properties: security, scaling, and decentralization. In fact, there are usually only two of them in networks: for example, Ethereum Classic is properly decentralized and secure, but does not scale. In contrast, Cardano is fast (i.e., highly scalable) and secure, but it is centralized. As explained above, the slow speeds in Ethereum are caused by a consensus algorithm, which requires most nodes on the network to approve each transaction. This must be done sequentially — one operation after another, which means that transactions cannot be parallelized. Although the transition to PoS already provides Ethereum Tech with good opportunities to solve the scaling problem, additional measures will need to be taken to make the network as fast as necessary to meet the needs of future growth.

The best solution proposed at the moment - and the one that Ethereum Tech will implement - is a shard. This concept is already widely used in databases and is expected to become the new standard for the cryptocurrency network in the next two years. In this model, the entire network state is divided into several fragments, or segments, each of which has a decentralized structure. Since each node processes only information related to its segment, and it really needs to occupy transactions that occur with other segments, payment processing is effectively parallelized, and the capacity is increased several times. Each shard also has its own set of validators, each of which must supply enough coins to include them in the pool of validators.

For the implementation of sharding, Ethereum Tech will present a special side chain of the lighthouse, which will serve as a source of pseudo-randomness when choosing

validators for each shard. A protected system is more vulnerable to attacks, since hacking may require only  $1 / n$  hashrate. The key to protecting Ethereum Tech's network from such attacks is to ensure that validators are chosen pseudo-randomly and that they cannot know in advance what fragment they will be assigned to. The chain of lighthouses will also contain information on the current state of each shard, acting as a link between them, although the side chain itself forms a separate Merkle tree and is not part of the Ethereum Tech blockchain.

When a user from one segment sends an ETTE payment to someone from another segment, TechConcept will be used to process them. The initial transaction sent to Shard 1 reduces the Ethereum Tech balance for user A (sender) and creates a receipt that is stored separately from the main state; The second transaction, which includes a receipt, is sent to Shard 2, where the receipt is checked; Finally, the balance of User B (recipient) increases accordingly.

We expect that the introduction of sharding will increase the throughput of Ethereum Tech to 6,000 t / s in the first implementation phase with 100 shards in the system.



## 2.3. Data storage integration

For all dApps and blockchain applications, this is not a problem. Indeed, there are several methods of management, insurance, design, coding, video manuals, technical manuals, etc. However, blockchains themselves cannot be used to store such items - they are simply not intended for this purpose. Standard blockchain transactions are limited to a few bytes. In the case of a blockchain, there is a limit on the limit for all cases.

There is no need to lock the system. It will be possible to ensure that it is possible to complete the process.

Decentralized data storage means renting unused space on the hard disk. This field is from the world.

This is a cryptographic hash for every large file. All hashes are stored in a table that is updated automatically. This allows you to make sure that it is possible, to make sure that it is possible. You can use both of these systems, such as SHA-256 hashes, and asymmetric, that is, it can be used as whole cryptographic mechanisms.

It is important to note that it is important that this is not a project or platform - it can be easily integrated with any other system, including Ethereum Tech. Our implementation of a decentralized data storage module will introduce a cash reward for storing files (paid by ETTE coins). For example, it is important to note that this was the case in the world.

### 3. Project implementation

This section describes the main stages of the implementation of Ethereum Tech and its modules, starting with the pre-sale of coins and ending with a snapshot of the Ethereum network.

#### 3.1. ETH network snapshot and distribution

The initial distribution of free coins Ethereum Tech will take place after the launch of the main network. The network snapshot is a standard practice for cryptocurrency hard forks and creates a list of all blockchain addresses containing a certain coin or token.

Any user who has Ethereum coins in a personal wallet at the time of the snapshot will receive free Ethereum Tech coins in a 2: 1 ratio. For example, a user who holds 100 ETH in a private wallet (for example, Coinomi, Jaxx or Ledger Nano) can request 200 ETTE for free. It is important to emphasize that only ETH stored in personal wallets (desktop, mobile or cold) are eligible for a free ETTE after a hard fork. Users who store their ETH in exchange wallets cannot claim rewards.

After taking a snapshot, ETH holders will be able to dispose of their coins at their discretion, including transferring them to the exchange, selling or exchanging them. The number of free ETTEs dropped into the hands of ETH holders depends only on how many coins they have at the time of the snapshot, and not before or after it.

For those users who would like to receive an additional ETTE, we have presented the opportunity to purchase ETTE for pre-sale.

Presale price set at  $1 \text{ ETTE} = 0.01 \text{ ETH}$ .

Accepted payment method: Ethereum

To take part in the pre-sale and purchase of Ethereum Tech, it is enough to send the desired amount of ETH to the following address:

0x84f41a27D73011eEfb9eA7214138C8cc045Ed137,

after the fork you will receive coins to the address from which the purchase transaction was sent.