ETC Cooperative

Roadmap 2021

The immutable fortress still stands

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Introduction

What is the Status Quo?

There is a major decision point facing the Ethereum Classic ecosystem heading into 2021.

Following the repeated 51% attacks of August 2020, dapp development, on-chain activity, network hash rate and price have all trended downwards. The status quo is not compelling, at least based on what the market is telling us. At the time of writing, as per Coingecko, in the last 12 months:

- $ADA +1444%
- $ETH +693%
- $DOT +680%
- $BTC +383%
- $ETC **-35%**

Those figures are a real wake-up call.

So what has that status quo been?

ETC Labs have dominated the ETC ecosystem since early 2019 as the primary commercial entity and as the maintainer of the dominant ETC client software (various flavors of Geth) and other supporting development tools. Their staffing levels have dropped significantly in recent months, however, and the focus of the parent company, DFG, is seemingly swinging towards Polkadot.

ETC Cooperative has funded development of ETC support in Hyperledger Besu since November 2019 but has not had sufficient funding to hire full-time core developers for Besu. Keeping up with hard-forks and general maintenance was all which was possible given the financial constraints. We did everything we could to help move the protocol forward but that could not extend to any real innovation.

IOHK defunded the Mantis client team in December 2018 and their focus was largely elsewhere through 2019 and the first half of 2020.

The ETC roadmap, through Atlantis, Agharta and Phoenix hardforks, was largely oriented at Ethereum compatibility and “catch up”. That strategy has not resulted in the adoption which was anticipated. That was the case even before the 51% attacks, which just made things worse.

Proposing Project "Phoenix"

During the 2020 financial year, the Coop had a broad range of goals. For the year ahead we are focusing on a much more targeted set of objectives, with the codename of "Phoenix".

In the aftermath of the 51% attacks we saw IOHK return to the ETC ecosystem. They have revived the Mantis client, implementing support for the hard-forks which they missed and bringing it up to production quality. At the time of writing the Mantis team has 16 full-time staff.

They have authored ECIPs for Checkpointing (ECIP-1097) and Treasury (ECIP-1098). A public testnet ("Sagano") has been set up where these features can be tested. They have also built an excellent UI wallet.

We find ourselves **very aligned** with the IOHK vision.

The ETC Cooperative has concluded that three mutually supportive proposals under the provisional codename of "Phoenix" are essential to the success of ETC and for the ecosystem to thrive.

The core proposal is the introduction of a treasury system, to provide sustainable and adequate funding for multiple client development teams. We also propose a transition to ASIC-friendly Keccak-256 mining, and temporary checkpointing support to ensure network security during the transition and for the period afterwards while hash rate is stabilizing.

Working through the ECIP system, we will be doing everything we can to break out of the status quo into a rebirth of ETC.

IOHK are on a similar path and we are coordinating our efforts as much as possible, with parallel work underway in Mantis and Besu.

Beyond "Phoenix", there are further exciting Proposed Direction proposals which IOHK are bringing to the table, including Prism consensus, KEVM and Firefly, NiPoPoWs/Flyclient and Coded Merkle Trees. With sustainable funding, we can all work together to build a truly innovative and differentiated platform.

What is Project “Phoenix?”

There are three mutually supportive proposals within “Phoenix”, namely **Treasury, Keccak-256** mining algorithm change and **Checkpointing**. The most important of these is the Treasury proposal.

Treasury

Blockchain protocols are complex systems that are expensive to research, develop, and maintain in an increasingly competitive market. Ethereum Classic has been supported on the model of donation, benefactors, and no formal governance, but year after year ETC has struggled to have the incentives for developers to deliver to the ecosystem.

A Treasury establishes sustainable funding for independent teams to both maintain the core protocol and evolve the Ethereum Classic platform, as well as grant pools for wider community development.

Benefits:

- Funding for multiple independent core development teams.
- Resistance to the monopoly or franchise by one single entity.
- Funding to innovate and compete with novel and new features.

Specification:

- ECIP-1098

Challenges:

- Major miners dislike the Treasury because it will take a percentage of the block reward to distribute to Treasury recipients.
- The governance of the treasury is still in debate.
- ETC Labs is resistant to the treasury.

Objectives:

- Collaborate with IOHK and other partners to solidify the Treasury proposal and its governance structure.
- If ETC Labs is not a Treasury recipient, then help support a third recipient team.
- Outreach to the mining community to explain the value of the Treasury proposal.

Keccak-256

Ethereum Classic (ETC) has been a minority chain in its Proof of Work since TheDAO fork and experienced four 51% attacks; The first 51% attack occurred in January of 2019, and three additional 51% attacks occurred in Q3 of 2020.

To date, no majority chain that specializes in its hardware class has been successfully 51% attacked. The majority chain in ETC's hardware class is ETH which has a combination of both commodity GPUs and ASICs which can threaten the ETC network. Other networks specializing in commodity GPUs can also threaten the ETC network.

If ETC was a majority chain that specializes in its hardware class, like Bitcoin, then the security assumptions of PoW would actually secure the network. To pursue a majority PoW status and reclaim the security assumptions of PoW, we're championing the implementation of the Keccak-256 (Sha-3) and Checkpointing solutions.

Keccak-256 is not adopted by any other major PoW network and ETC will have the first-mover advantage in this algorithm to be a majority chain and specialize in its hardware class.

Benefits:

- Become a majority chain and reclaim the security assumptions of Proof of Work consensus.
- First mover advantage.
- Keccak-256 (Sha-3) is more efficient, faster, and the latest member of the certified Secure Hashing Algorithm (SHA) family.

Specification:

- ECIP-1049

Challenges:

- Ethash ASIC manufacturers and GPU centric miners dislike changing the algorithm because Ethash ASICs have old hardware that can be repurposed to ETC and GPU centric miners dislike ASIC-friendly algorithms.
- Basic mining infrastructure is needed to start the new algorithm.
- ETC Labs is resistant to changing the algorithm.

Objectives:

- Outreach to the mining community to explain the value of the Keccak-256 proposal.
- Collaborate with partners to provide Keccak-256 mining resources; Miners, Pools, Tools, and network statistics to the community.
- Collaborate with partners to solidify the Keccak-256 proposal.

Checkpointing

Ethereum Classic cannot rely on the security assumptions of PoW because it is a minority chain. Outsourcing the security to a temporary checkpoint will provide a safe space to innovate and grow the ecosystem to the point where a band-aid is no longer necessary.

The change to Keccak-256 does reset the PoW to a new algorithm and in the case of a contentious hard-fork, it's uncertain how many existing miners will switch over to the new algorithm. There may not be many ASICs available on Day 1. FPGAs may dominate at first. See Henry Quan's Navigating mining options for the Ethereum Classic SHA-3 fork for more detail here.

Checkpointing provides safety guarantees from PoW attack vectors. The Checkpointing is not a desirable long-term solution and can be turned off once it has served its purpose. To further substantiate the argument for a Checkpoint and its alternatives, we've collaborated with IOHK on an ECIP Comparison for 51% Attack Resistance document for more information.

Benefits:

- 51% attack resistance.
- A defined threshold of finality provides deterministic confidence when transactions are final.

Specification:

- ECIP-1097

Challenges:

- Checkpointing adds a validation layer.
- ETC Labs is resistant to checkpointing.

Objectives:

- Outreach to the community to explain the value of the Checkpointing proposal.
- Collaborate with partners to solidify the Checkpointing proposal.

How?

Everything will be coordinated through the ECIP process.

In an ideal scenario, we would see ecosystem-wide consensus reached around the proposals and see the changes implemented in a non-contentious hard-fork.

If consensus cannot be reached then we would likely proceed with either a contentious hard-fork or a Proof-of-Burn. In such a Proof-of-Burn scenario, ETC tokenholders could choose to send their ETC to an "exodus" contract where their funds would be burned. They

would receive new “Phoenix coins” in exchange. This could even be made into a two-way process for a limited period of time.

When?

Quite urgent. The situation is worsening month by month.

It seems likely that we can have Besu implementations for each of the proposals together on a shared testnet before the end of Q2, aiming for activation in Q3 or Q4.

- We have signed a contract for implementation of Keccak-256 support in Besu. The work is already underway and likely to be complete during Q1.
- That initial work will be followed up by further work on improving Besu mining support in general, and on mining pool support for Keccak-256.
- Treasury and Checkpointing support in Besu is slated for Q2. When those are functional we will be able to join the Sagano cross-client testnet.
- We are in regular contact with IOHK’s Mantis team to coordinate work happening on the Mantis and Besu teams, and around the larger “Phoenix” project.
- There is regular dialog with the community (usually on Discord) where these proposals are a frequent topic of conversation. That discussion can be ratcheted up another notch with the publication of this Roadmap, especially with longer-form blog posts.

Baseline Operations

Irrespective of the success or failure of Project “Phoenix”, the ETC Cooperative will continue with the baseline operations which were established during 2020 or earlier:

Development and Infrastructure

- BlockScout instances for mainnet, Mordor and Kotti.
- Ethercluster instances for mainnet, Mordor and Kotti.
- Mordor mining node.
- Kotti validator.
- Boot nodes.
- Geographically distributed full nodes.
- etcnodes.org metrics.
- etcnetstats.com status dashboard.

Comms and Marketing

For the year 2021, the ETC Cooperative will continue its grassroots strategy by maintaining grassroots developer and community relations. By creating new strategic relationships with developers, influencers, and other organizations, we plan to increase the traction and adoption of critical, long-term changes proposed for the ETC protocol, i.e., Keccak256, Checkpointing, and Treasury. This strategy aims to minimize any damaging network or community split.

These changes will provide ETC with a unique vision and help change its image from a mere "altcoin" to an attractive and suitable decentralized computing platform with a vibrant developer community. We will plan and execute independent campaigns to build and secure the adoption of each proposed protocol change. This plan will include directly engaging with community members on the ETC Discord server and other active communication channels, creating engaging educational, social media content, ongoing participation in the ECIP process, and a possible rebranding effort. Hackathons, meetups, and other conferences will also play an essential part in raising awareness and securing the adoption of proposed changes for the new chain.

Our primary communication and marketing assets include ...

- etccooperative.org primary website.
- ETC Weekly mailing list.
- Medium as an additional channel for blog posts.
- Social media accounts.
- Press coverage.
- Possible conference attendance.

Governance

In 2021 we will be continuing with the governance processes which were put in place during 2020. The AGM is scheduled for February. There will be monthly and quarterly reports for the benefit of the Board of Directors and for the general public.

There will be increasingly targeted spending on Hyperledger Besu and other protocol work to support Project “Phoenix” which will come at the expense of the open grants program which has been a long-term aim of the ETC Cooperative. This is captured in the **2021 Budget** document.

The 2021 Budget will not include any assumption of Treasury activation and that additional funding for the ETC Cooperative.

Our 2021 Roadmap is all focused around Project “Phoenix”. As and when that project succeeds, we will be in a new arena, and plan from that point forward, with the benefit of significant, sustainable funding and all the options for future improvement that will open up.

ETC Cooperative