mStable

QUESTIONNAIRE
Note: you can decline to answer certain questions (like marketing / go to market) which may be trade secrets and we will put in "declined to answer due to current trade secret".

General

Which blockchain / DLT are you building on top of?

Ethereum at launch - we will support other smart contract platforms should a sufficiently large ecosystem of stablecoins, developers, and users exist.

How does the stablecoin work?

The mStable Standard is a smart contract system consisting of numerous meta-stablecoins (mUSD, mJPY, mGOLD, etc.). We call these meta-stablecoins mStable assets. Each mStable asset is backed by a basket of existing stablecoins, and by a utility token Meta (MTA) which serves as a backstop for all mStable assets. mStable assets are minted/redeemed via smart contracts. MTA is used to pay minting/redemption fees, coordinate decentralized governance, and is drawn upon as the system's ultimate re-collaterization resource. MTA holders are motivated to seek stability to avoid dilution.

What is the purpose of your coin? What does it aim to achieve and which problems does it solve?

mStable seeks to create a world standard for decentralized stable digital assets.

Extreme volatility impedes the core purpose, benefit, and usefulness of cryptocurrencies. Cryptocurrencies without stability will fail to become a unit of account, medium of exchange, store of value, or standard of deferred payment. Stablecoins seek to rectify this problem. However, in finding stability, most stablecoins sacrificed something more important: the key properties that give cryptocurrencies like Bitcoin their value. Most stablecoins are not decentralized, trustless, permissionless, or censorship resistant. Separately, individual stablecoins trade-off decentralization, scalability, and stability.

mStable is designed to be decentralized, verifiably collateralized, scalable, and minted/redeemed on-chain. Critically, it achieves this while minimizing system-wide risk by

diversifying across stabilization mechanisms and across multiple asset classes. mStable will adapt to and integrate future stablecoin innovations (say more scalable varieties) as its baskets are able to evolve over time.

When we say something is stable what do you think it means? And when it comes to monetary policy specifically?

Stability is by definition relative to other assets - it refers to purchasing power. We believe stability must be linked to another asset, such as USD, GOLD, or with time something independent of a nation-state - such as a consumer price index.

What is your revenue model?

While we wouldn't call it revenue, the Meta token is used to pay minting/redemption fees and is then burnt. In this way META will be deflationary as long as the system remains unimpaired.

Launch & marketing

What does the market need to be confident in the stability of your token?

> Exchange and liquidity partners - we currently have an advisor from OKEx (the second-largest crypto exchange by volume)

> We have an inbuilt bootstrapping mechanism whereby early users of the system are compensated with a proportionate amount of Meta.

> To become a primitive for Web3 applications. For example, we have strong partners at 0x, dydx and Compound. The emerging DeFi vertical will need a trustless, decentralized, scalable stablecoin - we aim to be it.

> With time, bring mStable assets to the real world (merchant acceptance, used by people in nations with high inflation, remittance etc.)

How are you bootstrapping to that level of confidence?

Above

What are your go-to-market strategies?

 Above

Economics

What is your coin stable with respect to?

The first mStable asset (mUSD) will be pegged to the US Dollar. With time we will have numerous meta-stablecoins in the system. For example, mJPY, mAUD. We will also integrate an mGOLD (possibly as the second launched asset).

How much volatility can this peg withstand? Is that the same for upwards and downwards pressure? How wide is the band of behavior it can support?

MTA is the ultimate backstop to the mStable system. When a stablecoin in a basket deviates from its peg beyond a predetermined threshold, *MTA* is diluted and sold off in order to raise sufficient funds to recollateralize the mStable asset in question. The

The price oracle steps in to immediate redefine the basket to exclude affected asset. We call this process an auto-redistribution event;

The set of Governors then decide if the underlying stablecoin has lost its peg permanently. If yes, then the affected stablecoin will be isolated. If the stablecoin still has some value, it will be auctioned off in exchange for the mStable asset, which will be burnt.

Ultimately, *MTA* will be printed and sold for the mStable asset which will be taken out of circulation until full collateralization has been restored.

How easy is it to analyze the band of behavior from which it can recover?

This is challenging and impossible to be automated at this stage. Governors are critical in making a decision about this ahead of printing MTA.

How expensive is it to maintain the peg/stability mechanism?

If the system is unimpaired, it is not costly as it is fully collateralized (backed at a 1-1 ratio). Should MTA be printed for re-collateralization, MTA holders will be diluted and thus incur an expense proportional to the size of the print.

How transparently can traders observe the true market conditions?

100% transparent, as all assets are held on-chain, and the definition of the stablecoin basket composition and all other parameters are publicly observable via the smart contracts.

Which monetary theory (theoretical) assumptions do you think are not true and how does your protocol account for that?

As a meta-coin, we don't have to take a side; instead, the meta-stablecoin diversifies between stablecoins with different underlying assumptions

Does your stablecoin supply scale in response to demand? If so, how?

The system scales nicely since:

1. Arbitrage is all on-chain and direct

2. It is not over-collateralized

3. It is not debt based

Who provides the capital to maintain exchange rate peg? How are they compensated / Why do you think they would continue to lock up capital, given other investment opps?

It is 1-1, so this isn't debt based. Users get back the value they put in.

Users will lock up their stablecoins if they are seeking risk-minimized stability in the cryptocurrency environment whilst wanting to preserve the characteristics that come with decentralization

Arbitrageurs maintain the exchange rate peg by minting and redeeming mStable assets when a spread exists.

An eventuality plan in case of a "black swan" event.'   The 1% case will happen eventually.

Several characteristics of mStable have been adopted to minimise the impact of black swan risk:

> mStable's governance reinforces the system by incentivizing a low risk basket as instability risks MTA dilution. Due to this, only the best asset-backed (fiat or crypto) and algorithmic stablecoins will be integrated in weightings that reflect their underlying trade-offs.

> Diversification means that a single stablecoin breaking its peg is not a catastrophic event.

> Arbitrage of the mStable basket will likely drive stability for all underlying stablecoins as well as for the mStable asset.

> The *MTA* token itself is robust as it will derive value from a number of distinct mStable assets. *MTA* dilution is unlikely to lead to a negative spiral as it continues to derive value from other uncompromised assets in the system.

> Finally *MTA* is the ultimate backstop to the mStable system. When a stablecoin in a basket deviates from its peg beyond a predetermined threshold, *MTA* is diluted and sold off in order to raise sufficient funds to re-collateralize the mStable asset in question.

Tech

Are any novel consensus mechanisms used, over and above the underlying blockchain?

No

What transaction throughput can the blockchain currently handle and how does it plan to scale? Do its plans coincide with your plans for your estimated demand?

Ethereum can currently handle ~15 transactions/second. There are major scaling efforts underway both for the base layer and second layers/sidechains.

Are there any centralized components of your system? Would any of these be easy for govs to shut down?

In maturity, there will be decentralized governance - the core team will dissolve and only have input from voting on proposals according to their relative stake in Meta.

The only centralised aspect to the project is if there are centralised, mostly fiat backed coins in the basket. Governance will have to determine their relative weights so that this risk is minimised.

Does your protocol require information outside the blockchain such as a feed of price data? If so, how does this oracle work? Who manages it, what are the incentives for managing it, and what happens if the data they provide has a glitch?

The mStable system requires real-time price data on every stablecoin within each basket as well as for MTA in order to calculate fee payments.

MTA voters will choose a set of trusted, whitelisted oracles that provide this price data. The oracles feed price information to the system by sending on-chain transactions with the data included. The price data is fed into a smart contract. This smart contract is able to compute the median price of submitted price data. Each

new price submission triggers a recalculation of the median price for the asset in question. A minimum number of submitted feeds is required for the price feed to be considered valid by the system.

The *MTA* governance will be empowered to add or remove the whitelisted oracles. *MTA* holders are incentivized to choose responsible and robust price feeds.

Which participants can see which transactions? What is the data and metadata available, and to whom? How does this impact privacy?

It is an ERC-20 token without any privacy optimisations at this stage.

Are you doing anything with formal verification? Smart contracts used?

We plan to do extensive testing of our smart contracts (including a testnet launch), in addition to professional auditing, ahead of the mainnet launch.

What is the rebase period? (Length of time between currency adjustments.)

Adjustments to the weights of the basket's underlying stablecoins can be made with a single Ethereum transaction (smart contract function call) via voting from decentralized governance.

Can we make this automated?

MTA holders will make these decisions through decentralized governance. MTA holders could make these decisions manually, or through a semi/fully-automated process in future (e.g. delegating their votes to a bot or other authority)

Regulation

What are your perceptions of local and global regulation in supporting stable coin, asset backed token economies?

Good on the whole. But a stablecoin must remain decentralized and censorship resistant to withstand regulatory headwinds. It is clear that stablecoins or their secondary tokens cannot be securities - Basis shut down for this very reason.

What could be done to improve regulation in terms of speed, quality, value for your company ?

Clear guidelines on securities.

Testing

What kind of simulations have you done and what have they helped you learn? (simulating broad array of market conditions)

Mental models for simulations

Econometric models

Agent-based Modelling / Computer simulations

Other (Please describe)

We have back-tested meta-stablecoins, and plan to do extensive testing before launch.