Dether

BUY & SELL CRYPTO FOR CASH.

WHITE PAPER

WHAT IS DETHER?

Dether is an international peer-to-peer network of individuals willing to buy and sell cryptocurrency with cash and spend it at physical stores nearby.

We created the Dether ecosystem to be a bridge between crypto and fiat all over the globe. Inspired by Satoshi Nakamoto's vision to create a peer-to-peer electronic cash system for Bitcoin, coupled with the state of the current, unfair remittance market, we decided to create an easier solution for financial inclusion that incorporated the vast potential of blockchain, available to users across the globe using cash, and without the need for a bank account.

WHAT IS THE DETHER APP?

The Dether App is your cash to crypto on/off ramp. It is a decentralized mobile application (dApp) that enables individuals in over 140 countries to buy and sell crypto locally with cash — no bank account needed, and no fees taken by us.

First launched on testnet in 2017, then on mainnet in August 2018, the Dether app creates a direct bridge between cash and cryptocurrency. With the Dether App, we have built a frictionless solution for individuals willing to trade crypto with others.

WHAT IS THE DETHER PROTOCOL?

Built on Ethereum blockchain, the Dether protocol provides developers a set of decentralized tools to create a bridge between cash and cryptocurrency.

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1. INTRODUCTION

With the 2007 financial crisis still leering over the economy, the need for a decentralized banking solution has come to the forefront of ingenuity. Against the backdrop of raising awareness and the need for more trusted global solutions, blockchain technology opened doors for new opportunities by using cutting-edge technology to serve societies all over the world. The technology initially underlying the Bitcoin protocol has the power to have a great impact on our society by transforming our industries. Financial services, healthcare services, even governance: a wide range of fields could be disrupted using blockchain technology. And by disrupting those multiple fields, it could also allow for better inclusion of populations left behind by globalization.

The creation of the first blockchain with Bitcoin has highlighted the fact that decentralization is the core value of blockchain. Going through a centralized organization or institution has a systemic risk, being that this central entity is in fact a single point of failure that can destroy everything that's below it.

Blockchains are powerful because they generate decentralization. Decentralization has the unique ability to give people control back over their rights, their digital assets, their data, their vote and more.

More than a simple digital currency, cryptocurrencies offer promising opportunities. Blockchains enable anyone to access and interact with decentralized applications (dApps) and smart contracts. It gives the disruptive ability to build trustless digital societies and organizations in which its applications don't have any kind of censorship, fraud or third party interference; societies where you can participate in a democratic and autonomous organization with trust, and without previously knowing any participants. The power of Blockchain technology and its extremely active community opens up a world of possibilities for the future of our society.

Blockchain technology is flexible and ready for scaling in the near future, with prospects for off-chain systems.

2. CHALLENGES TO CRYPTO MASS ADOPTION AND OBSERVATIONS

Decentralization is at the heart of blockchain; it is even viewed, in the words of Vitalik Buterin, as "blockchain's entire *raison d'être*[1]."

As an example, Ethereum enables anyone to build unstoppable applications: a trustless digital world where its applications don't have any kind of censorship, fraud or third party interference. A world where you can participate in a democratic and autonomous organizations without previously knowing any participants.

In fact, when one buys crypto, it then becomes possible to access and interact with blockchain. While we're living in an important time in history, where blockchain technology, and especially Bitcoin and Ethereum, are changing the world, one of its greatest challenges remains mass adoption.

At Dether, our goal is to break barriers to crypto mass adoption. We are driven by our mission of making it easy for individuals across the globe to buy and sell ether, Bitcoin and ERC20 tokens.

Yet, buying and selling crypto remains a centralized process that's long, difficult and unnecessarily excludes over 2 billion people:

- ❖ It takes time and costs money. Registering online, depositing money and getting verified takes days or weeks. And time is money.
- ❖ Decentralization is at the core of blockchain's value proposition; yet, central entities still play a major role in the process of buying cryptocurrencies.
- ❖ The overly complex buying process creates barriers to mass adoption, as more than 2 billion adults are unbanked and don't have the necessary bank account or personal identification to buy cryptocurrency.

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[1] https://medium.com/@VitalikButerin/the-meaning-of-decentralization-a0c92b76a274

3. SAY HELLO TO DETHER

Say hello to Dether!
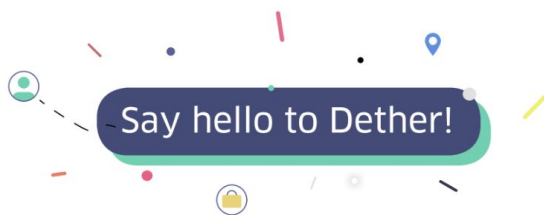
3.1 A CASH-IN CASH-OUT CRYPTO SOLUTION

Dether is a network of individuals and businesses willing to buy and sell crypto, Bitcoin and ERC20 tokens without a middleman. Dether enables individuals to buy and sell crypto using cash and spend it at physical stores listed on the Dether map.

3.2 THE DETHER PROTOCOL

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Today, many projects and teams are building decentralized applications in various industries on top of Ethereum reaching, in most cases, the current crypto community. In the very near future, these applications could easily reach across the globe, to anyone that has internet access.
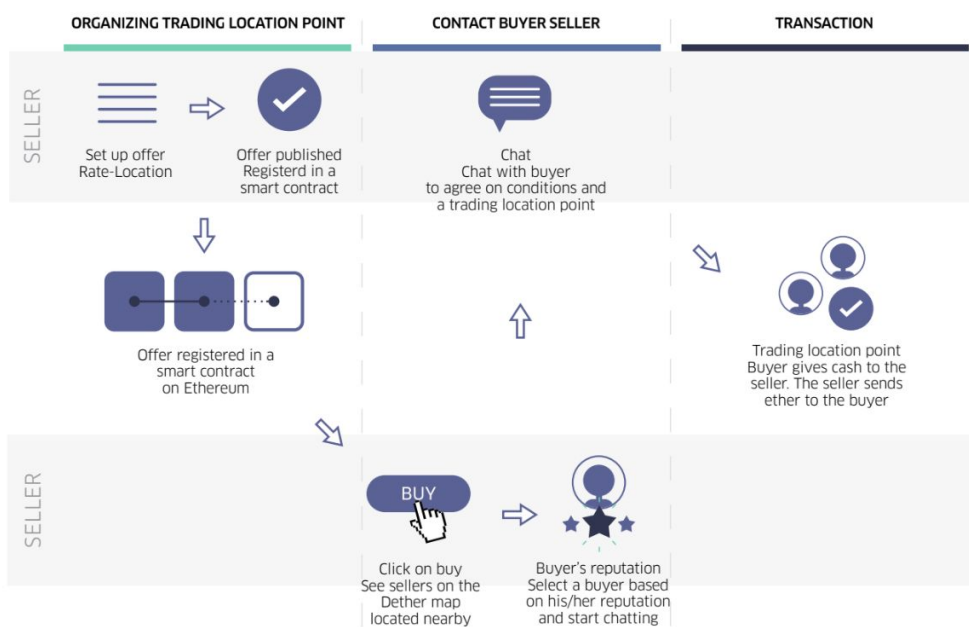
In order to make that happen, we believe that having an easy way to cash-in cash-out ether and ERC20 tokens is already needed, and will become more and more necessary--not only for the Dether community of users —but by dApps willing to target individuals and businesses located in areas where having an access to financial services, and thus cryptocurrency, is limited. In order to build an increasingly stronger network, we need to facilitate access to it. That's where the Dether protocol comes in.

The protocol enables dApps to easily build crypto cash-in and cash-out services in their dApp. They are able to register new crypto sellers by themselves (and also refer them to earn money on their trade), or simply load the list of sellers/shops around the users.

Built on Ethereum blockchain, the Dether protocol provides a set of decentralized tools to create a bridge between cash and cryptocurrency.

It is an open protocol built on top of Ethereum for dApps and crypto projects that share a crypto cash-in and cash-out issue.

Using the Dether protocol, dApps can:

- ❖ **Register new points of sale in the Dether protocol.** Similar to 0x's protocol model, dApps have the ability to register new crypto sellers into the Dether. This gives dApps the ability to offer users a way to make extra revenue by becoming a crypto point of exchange.
- ❖ **Get sellers from the Dether protocol**. Similar to an API, dApps can load the list of crypto sellers and shops registered in the Dether protocol. Users are able to locate the closest crypto sellers around them and shops accepting cryptocurrency displayed on the Dether map in order to get in touch with them and transact. DApps are able to freely build their own front-end on top of the Dether protocol to easily add cash-in and cash-out services to their dApp.

- ❖ **List their token on the Dether protocol**. By staking DTH and by providing enough liquidity, Dether sellers are able to sell a particular dApp's token for fiat currency across the globe (using a third party liquidity provider).

Dether.js is a javascript library available on GitHub. It's all a developer needs to build an app interacting with the Dether contract, without ever needing to instantiate contracts.

The protocol is promise-based, which allows developers to use the async/await syntax.

DISCOVER THE DETHER PROTOCOL DOCUMENTATION PORTAL

3.3 THE DETHER APP

The Dether app enables individuals to buy and sell crypto for cash and spent it at physical stores located on the Dether map.

The Dether app is a decentralized cash to crypto on/off ramp. It's a peer-to-peer marketplace that allows individuals to buy crypto directly from other people.

Dether offers the unique opportunity to have access to crypto within minutes by using a phone and spending cash. Users are able to discover crypto sellers near them on the Dether map and chat with them. They can see their crypto/fiat rate and the fees that they take when clicking on their profile. Buyers are free to engage a conversation with the seller they want to trade with in order to agree on the trading conditions and the meeting point to exchange crypto for cash.

Users can sell crypto, with the freedom to set their own fees. Users can currently buy and sell crypto for cash, and exchange crypto for a variety of ERC20 tokens ((by using a third-party liquidity provider, and exchange those ERC20 tokens for ether).

The Dether app is available for Android and iOS as a PWA (progressive web app).

Launch now as Web App

https://get.dether.io
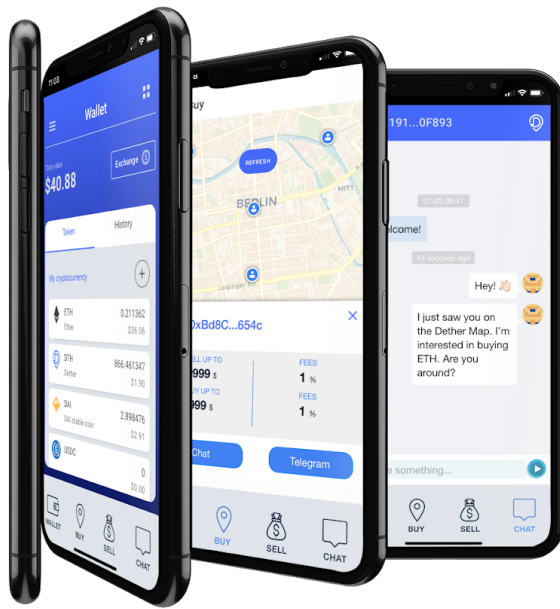
3.4 DETHER FOR SHOPS

By building a decentralized and peer-to-peer ecosystem of cryptocurrency buyers and sellers, physical shops are naturally interested in targeting them.

Dether for Shops offers retailers a simple way to add their shop into the Dether Map. It comes at a moment in history where major online advertisement actors are banning any crypto related ads, making it almost impossible for legitimate retailers to advertise it online and welcome cryptocurrency holders into their physical store. By proposing Dether for shops to retailers, we hope to fight the censorship of crypto ads and allow legitimate businesses to freely target the crypto-community.
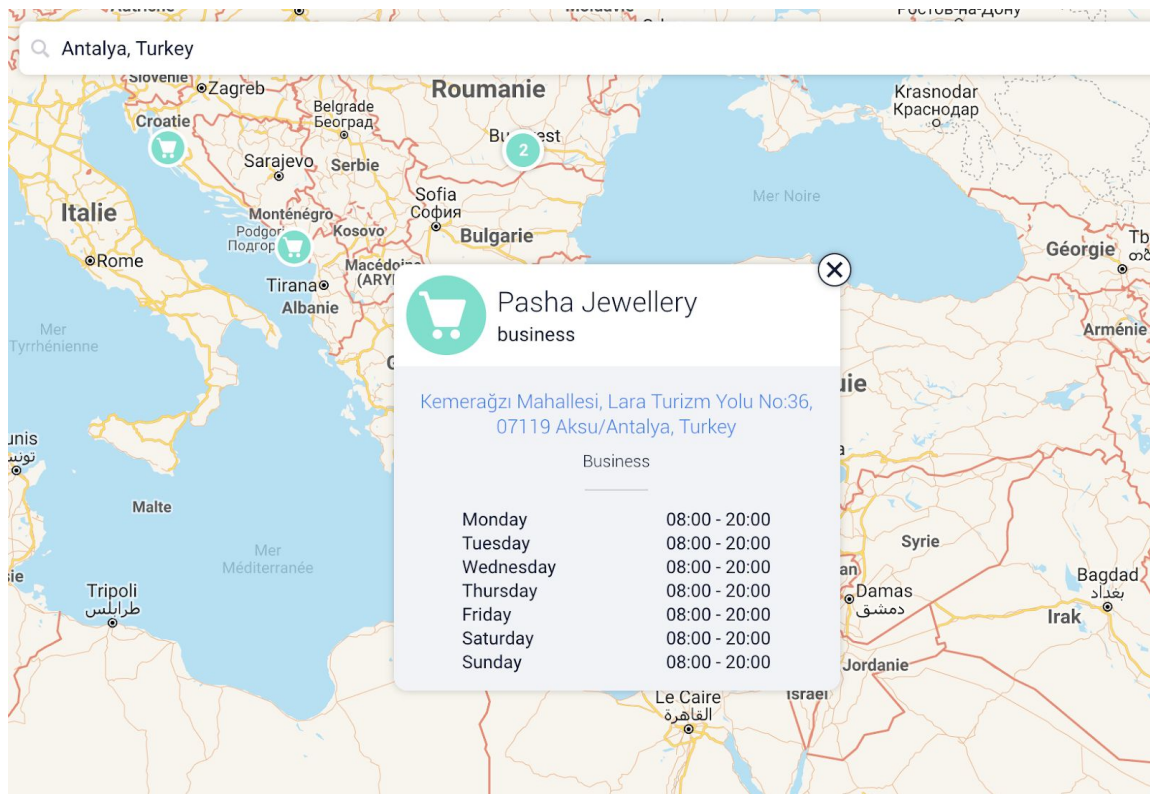
4. THE DETHER TOKEN

Just like taxi drivers who must hold medallions to do business in many parts of the world, users wishing to operate as sellers or shops must stake a minimum amount of DTH tokens for entry. This requirement helps Dether attract only real users willing to engage in authentic transactions on the marketplace and Dether map.

4.1 REDUCING NETWORK CONGESTION AND IMPROVING MARKET SAFETY

By allowing any party to easily register and vend on the Dether network, it would be reasonable to expect significant counts of low-quality or fraudulent listings. To prevent this, a staking mechanism requires that participants have "skin in the game" by locking in a minimum amount of DTH prior to transacting.

4.2 PROTECTING AGAINST NETWORK TAKEOVERS

Network attackers may raise capital and attempt a network takeover by staking large amounts to create many fraudulent accounts, increasing network congestion and undermining the overall legitimacy of the network. With the DTH token, any attempts to aggressively purchase en masse will be met with sharp price increases, which would make the attack far more expensive and likely unprofitable.

4.3 STAKING DTH

In order to have their point of sale registered on the Dether protocol, Dether sellers must own a zone. A zone is defined as an area of 1kmx600m. Each zone can be owned by staking a sufficient amount of DTH on it. Each zone can be claimed by anyone willing to stake more on said zone, thanks to an open auction system running on top of the protocol, inspired by the Harberger taxes system.

Similar to Dether sellers, shop owners must also currently stake a certain amount of DTH (42 DTH or an amount decided by the zone owner) to list their shop on the Dether map.

DApps are also be able to list their ERC20 token in the Dether protocol by staking DTH and by providing enough liquidity (by using a third-party liquidity provider). Dether sellers are then be able to sell their token for fiat currency.

4.4 DETHER ZONING SYSTEM

Zones are pieces of land that Dether sellers can "own." Zones must be "owned" for a particular purpose and are won through an auction.

The auction system takes place like this:

The user selects the zone they want to own in order to benefit from being more visible. For example, the seller would have to own the zone where he or she wants to operate.

Each zone may be empty or possessed by another user. The challenging user can outbid the previous owner with more DTH.

The auction winner "owns the zone" and enjoy the specific benefit for at least 24 hours. Zone owners lose a percentage of their staked DTH every 24 hours to prevent the concentration of power. As we make more progress, community members are encouraged to take advantage of our open protocol to create new benefits for zone owners.

5. THE ROAD TO DECENTRALIZATION

Dether's strategy is to build an accessible network and make buying ether easy for individuals who have a smartphone and internet access.

We strongly believe that having a trustless solution is the key to Dether's development. Users must be able to exchange and trade with one another with trust, despite not knowing each other beforehand. In other words, we've decided to align

our strategy with blockchain's core principles, where the power of its users, and not a central entity, determines its success.

That's why we're following a roadmap that integrates different key elements of decentralization on each feature we integrate, in order to propel Dether towards an open protocol.

5.1 PROGRESSIVE WEB APP WITH REACT

In a world full of uncertainty, proposing an application that relies on a decentralized infrastructure, while being dependent on a centralized body (like app stores) is no longer a viable option.

That's why from its outset, we envisioned and built Dether to be compatible with the PWA format. The progressive web app is a new format based solely on web technologies, allowing a user experience close to native applications, while relying only on a web browser. Progressive web apps can be installed with a simple click of your smartphone browser, and thus do not pass through the app stores.

5.2 IN-APP WALLET

Dether uses a standard light wallet with an encrypted private key on the device, enabling the user to safely send and receive ether. The user's private key is created on his local device and never sent to any central entity or servers.

A 12-word seed phrase is generated and associated with the user's wallet. The backup phrase is a combination of 12 random words set in a particular order and acting as a tool to recover or back up his wallet. The user, and the user only, is able to regenerate their backup phrase on their device in order to back up their wallet.

We use the standard derivation path "m/44'/60'/0'/0" so our generated seed phrase is fully compatible with wallets like Myetherwallet or metamask.

In order to enforce security, the user is invited to set up a password when creating his wallet to secure his or her wallet access. For example, securing Dether Wallet with a password enables the user to prevent fraud if their phone is lost.

5.3 PEER-TO-PEER MESSAGING

Globally, every smartphone user has a three out of four chance of having a chat application already installed on his or her mobile phone. In addition, each user has a one in three chance of using two or more chat applications.

But there are two major problems with these applications today.

There are serious concerns in the protection of personal data. Protection is not guaranteed, and data is often exploited to the detriment of users. However, some messaging applications, such as Telegram, do better than others by encrypting end-to-end communications.

There are also hurdles related to the centralization. Here, the solution has yet to be found. That's why we are working on a peer-to-peer client chat enabling users to directly communicate together within the Dether app.

5.4 ETHEREUM SMART CONTRACT AND PROTOCOL

Ethereum is a protocol based on blockchain technology. This technology allows for the exchange of value, like Bitcoin, but also to deploy programs on this protocol. These so-called intelligent programs are called "smart contracts."

A JavaScript library is available with all the functions needed to interact directly with the smart contract. DApps are able to either add a seller, or get all the sellers available on the Dether map. For each seller that registers through a dApp, they'll have the possibility to earn 0.X% of fee on each of their trade. This happens directly through the smart contract.

Main functions dApps are able to call:
- ❖ RegisterSeller: add a new seller on the Dether map
- ❖ GetSeller: get all the sellers located in a given area

The protocol is fully open. As a consequence, any dApp are able to register sellers and shops into the Dether protocol. As a dApp that's using the Dether protocol, they have the ability to choose:

- ❖ The countries and/or regions where the dApp is operating their services to/from
- ❖ Whether their users can see all the sellers displayed on the map or only those registered by selected dApps or users that passes a KYC process (if the dApp chooses to implement one to register new sellers into the Dether protocol).

More information about here: https://dether.io/en/protocol

5.5 REPUTATION SYSTEM

The reputation system is based comments and ratings left by users on a seller's point of sale on the Dether map. This information assists buyers in decision-making, allowing them to distinguish between all of the sellers displayed on Dether Map.

6. PROJECT DEVELOPMENT ROADMAP

This information reflects the state of the Dether roadmap in August, 2020. For more details, please refer to the roadmap page on the Dether website.

6.1 COMPLETED

6.1.1 ALPHA LAUNCH

The alpha version of the Dether app was launched on Kovan testnet in October, 2017. We not only launched the alpha app during this time, but we also collected important feedback from early Dether users that we were then able to implement into the app.

6.1.2 DETHER TOUR IN ASIA

Participated in local meetups and Dether project promotion throughout Asia.

6.1.3 NEW WEBSITE AND DETHER REBRAND

Released Dether's new website and rebranded our image to better capture our mission of mass adoption for all.

6.1.4 DETHER FOR SHOPS

We launched Dether for Shops, in March 2018, allowing retailers to register themselves on the Dether map and let shoppers know that they accept cryptocurrency. Merchants around the world in places like Australia, Japan, and Croatia listed their shops on the Dether map.

6.1.5 DETHER APP: PROGRESSIVE WEB APP LAUNCH

The PWA version of the Dether app was launched on Ethereum mainnet in August 2018. It functions as the first version of the Dether app, and was originally released in 120 countries, with 20 new countries added in September 2018. With the Dether progressive web app, users can transact with individuals and shops that accept

crypto, exchange ETH for ERC20 tokens and vice versa, find crypto buyers and sellers nearby via the Dether map, discuss trade conditions through Telegram and schedule an appointment in order to make a transaction, and make a successful transaction secured by the Dether smart contract.

6.1.6 REGISTER A POINT OF SALE ON THE DETHER MAP

Smart contract enabling a Person Teller Machine (PTM) to register, edit, and delete a point of sale was added.

6.1.7 SELL ETHER FOR CASH

Enable Dether's PTMs to sell ether for fiat currency.

6.1.8 BUY ETHER WITH CASH

Enable Dether's PTMs to buy ether with fiat currency.

6.1.9 REPUTATION-RELATED INFORMATION

Reputation-related information based on the number of transactions and volume of ether bought/sold by the user.

6.1.10 INTEGRATION OF ERC20 TOKENS

Fund and withdraw selected ERC20 tokens available on the Dether wallet.

6.1.11 ETH TO ERC20 TOKENS EXCHANGE FEATURE

Decentralized exchange feature to swap ETH for ERC20 tokens and vice versa (using a third-party liquidity provider).

6.1.12 DETHER DESKTOP WEB APP

The Dether desktop web app was released in October 2018, allowing users to access and use Dether right from their desktop or laptop computer.

6.1.13 WEB3 VERSION OF DETHER

A web3 version of the app has been completed, enabling dApp stores and decentralized browsers to list the Dether app and make it available to their users, as well as a manual token listing feature, which allows the team to manually list desired ERC20 tokens in the app.

6.1.14 NATIVE APPS FOR iOS AND ANDROID OF THE BETA VERSION

An iOS version and an Android version of the Dether Beta app have been added to the App Store and Play Store respectively. The process was done using Cordova.

6.1.15 DETHER TOUR IN SOUTH AMERICA

Participation in local meetups, Dether app project promotion, and live demos.

6.1.16 SELL ERC20 TOKENS

Enable Dether People Teller Machines (PTM) to sell ERC20 tokens to buyers (by using a third-party liquidity provider).

6.1.17 MANUEL TOKEN LISTING

Manually list ERC20 tokens requested by the Dether community in the Dether wallet.

6.1.18 INTEGRATION OF NEW CURRENCIES

Add selected currencies to the Dether wallet, enabling more individuals to buy and sell ether in their local currency.

6.1.19 BETA APP TRANSLATIONS

We wanted to make Dether content easy to access around the globe, especially in areas where the Dether community is growing the fastest. With nearly 500 million Spanish speakers in the world, over 200 million Portuguese speakers, and 200

million Russian speakers, we hope to reach many new Dether users. The Dether Beta app and website have been translated into Spanish, Brazilian Portuguese, and Russian. The Dether Beta app has also been translated into French.

6.1.20   ZONING SYSTEM

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We are also refining the Dether map to create a zoning system for premium places on the Dether Map for sellers. A [geohash system](#) is used to zone Dether seller regions, while a modified [Harberger tax system](#) allows for continuous auction of said zones by Dether sellers. Zone owners hold a variety of benefits, and are even able to "rent" out their zone to local businesses.

We use a geohash of size 6 to define users zones, as it correlates to about 1.22km × 0.61km, or about a 10-minute walk. With the geohash location data, it's easy for a seller to share the first four characters of his or her country code to verify it on-chain.

The GeoRegistry.sol smart contract (where the country zone is registered) is as open as possible. Other users are able to add other smaller areas (like cities, topographical areas, etc.) to the query to see if smaller areas are included in these same root zones.

To own a free zone, users need to stake the licensing fees (the minimum being 100 DTH) or add more to discourage other people from entering in an auction for the zone. To own a zone that's already occupied, they need first to pay a one time bid fee to start an auction (this mechanism is in place to discourage ill-intentioned people). Then user A, (or anyone willing to enter the auction), can bid more than user B to get the zone over a period of twenty-four hours.

If user A loses his zone, the user gets their staked DTH minus the taxes he'll need to pay in pro rata of time he gets the ownership.The taxes go to the tax collector contracts.

6.1.21 IN-APP CHAT

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Peer-to-peer client chat enabling users to directly communicate together within the Dether app.

6.1.22   AUTOMATED TOKEN LISTING FEATURE

On the horizon is an automated token listing feature, where dApps can automatically list their ERC20 tokens on the Dether wallet by using a third-party liquidity provider.

6.1.23   ADD TOKENS MANUALLY

Enable users to manually add ERC20 tokens in their Dether wallet by using the token's Ethereum smart contract address

6.1.24   DETHER FOR SHOPS INTEGRATION IN THE DETHER APP

Combine Dether for Shops solution with the Dether app: enabling shop owners to add their business on the Dether map by staking DTH tokens using the Dether App.

6.1.25   REPUTATION SYSTEM

Allow users to leave comments after they have carried out a transaction together.

6.1.26   ENS INTEGRATION

Implementation of the Ethereum Name Service (ENS) into the Dether app enabling Dether users to use their correspondent's ENS domain name when sending and selling cryptocurrency. Link the ENS name of an existing ETH address on the user's receiving interface.

6.1.27   IN-APP ORGANIC REFERRAL PROGRAM

In-app organic and decentralized referral program enabling existing Dether users to share the app with others and both get rewarded for that.

6.1.28 DETHER NEW APP TRANSLATION

Translate the new Dether app in various languages.

6.1.29 BITCOIN INTEGRATION IN THE DETHER WALLET

Enabling users to fund, store and send Bitcoin (BTC) with their Dether Wallet while maintaining the non-custodial aspect of it.

6.1.30 BUY AND SELL BITCOIN AROUND YOU

Enabling sellers to buy and sell BTC with their Dether app and make money from it.

6.1.31 AFFILIATE PROGRAM

We are creating a decentralized affiliate program based on the Dether Protocol. DApps built on top of the Dether protocol have the choice to take a fee on trades made by the users the dApp onboarded.

6.1.32 DETHER PROTOCOL

Enable decentralized applications (dApps) that share crypto cash-in and cash-out issues to interact with Dether's decentralized cash-to-crypto OTC protocol. Discover the Dether Protocol documentation here: https://dether.io/en/protocol

6.2 IN PROGRESS

6.2.1 POLKADOT CROSS-BLOCKCHAIN INTEROPERABILITY

Connecting the Dether App with Polkadot to give users the ability to interoperate with a wide variety of blockchains in the Polkadot network.

7. JOIN US

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