

Byron Network

Whitepaper

v1.1





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Abstract

Byron Network aims to bring the cutting edge solution for traders, hodlers and blockchain lovers. HD Mobile Wallet and a decentralized exchange on Cardano Blockchain is only the first step in the development of the Byron ecosystem. Our goal is to deliver investment tools and a cryptocurrency gateway for multichain investing for any blockchain enthusiast.

Disclaimer

The information included in this Whitepaper is subject to change or update and should not be interpreted as a commitment. Byron Network has the right to adjust the development process supposing the appropriate reasons to do so appear.





1. Introduction

The goal of Byron Network is to achieve an ecosystem that allows traders to use necessary trading tools to guarantee risk control, ease of use and user satisfaction. With a constantly growing crypto community we want to step up and make sure that the market is ready for new traders and is able to meet their high expectations.

Fundamental functionality that allows swaps of crypto assets on decentralized exchanges is going to be enhanced in BynetDEX with professional trading options such as limit order or stop loss order. Based on the user feedback the team will flexibly adjust trading possibilities. Due to our team consisting of crypto traders, we focus strongly on user experience as we understand its importance. The Byron ecosystem is going to be a fully operative package that ensures clear and easy usability. Think of us as DEX with all the features of CEX.

2. About Byron

Our team comprises of experienced developers and knowledgeable crypto experts, passionate about creating the backbone of the crypto trading industry. We have had a 5-year long experience building blockchain projects for our clients as a BinarApps.com software company. We supported projects such as Everest.org, Brave.com, Dash.org, Asdra.com and Minerva. Cardano with its uniqueness is a perfect opportunity for our team to make use of our expertise and contribute to the constantly expanding community. Thanks to the delivery of expectation-exceeding user products we hope to capture the potential behind Cardano Blockchain. Having the years-long yet state-of-the-art experience in the field helped us to understand the market, as well as to recognise its need for a release of a cross-chain solution.





3. EUTxO model on Cardano

To understand the uniqueness behind Cardano and the reason why it is important to contribute to such a thought-through project, this section will go over the most critical features of Cardano.

Known blockchains use either an account-based model, such as Ethereum or UTxO model, such as Bitcoin. However, the team behind Cardano blockchain noticed the potential of UTxO while also implementing certain changes to ensure great potential of their blockchain. Double spending is just one example of an issue that is not a concern for Cardano blockchain participants. One of the changes applied by the Cardano team to the already existing UTxO was adding “datum” to transactions outputs. It is an extra argument that is passed in the process of validation and is used to bear the state of the state machines. Thanks to datum there is no need to change the contract’s script. The second modification is “context”. Its data allows the validator to carry out more complex conditions. The last important change done by Cardano is including the validity interval to transactions, between which a given transaction is going to be processed.

Expertise behind Cardano mirrors the values of Byron Network. We want to build something of use to the community. That is why the scalability, cheap fees or achievable amount of transactions per second play a significant role in creating a trustworthy and widely used ecosystem.

Even though our products are going to be fully functional on Layer 1, after Layer 2 on Cardano is delivered, there is going to be more space for integrations, and therefore, optimizing the mechanism.





4. Byron Ecosystem

The first milestone of Byron Network is going to be a HD Mobile Wallet for Cardano launched on the Google Store and Apple Store in Q1 of 2022. Our strategy takes into consideration giving users the opportunity to get to know our Bynet Wallet so that accommodation with BynetDEX is going to be smoother. At the beginning of 2022 BynetDEX is going to be launched on Cardano testnet and in the Q2 of 2022 we plan to deliver the exchange on the mainnet to provide the full package with all necessary functionality. Another step would be, along with working on DEX and Mobile improvements, creating a multi-chain bridge and ecosystem.

4.1. BynetDEX

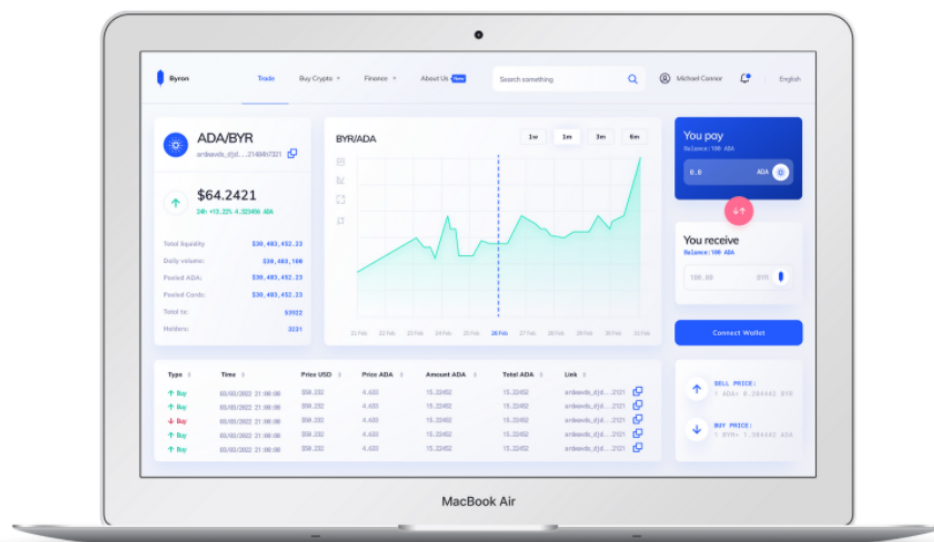


Figure 1. BynetDEX

Decentralized apps, in particular decentralized exchanges, have been getting more and more attention with the possibilities they offer. Without the need for a third party, DEXes offer their participants a wide range of





incentives. BynetDEX allows the exchange of native Cardano crypto assets between the users. The development and introduction of multi-chain will welcome swaps with any crypto assets, regardless of their blockchain.

Apart from being traders, participants of the DEX are going to be given a choice to become a Liquidity Provider or a Performer. Having various economic incentives one can decide which role fits their strategy best. In addition, BynetDEX users are going to be able to use the wallet of their choice, whether that would be Bynet Wallet prepared specifically for BynetDEX or any other integrated Cardano wallet

DEX participants

We have 3 types of actors:

- **traders** - those are the traders interested in exchanging their crypto assets for other crypto assets, without intervention of any third parties. Traders' objective is to swap the assets with the most optimal price possible. They are going to be able to use trading options such as limit order or stop loss order. That way the trading experience will be close to what traders find familiar with CEX. In addition, these types of orders are thought to be a fundamental part when discussing risk management. To submit an order trader has to pay a small ADA fee that is later on distributed in a given share to BYNET holders.
- **liquidity providers** - people with funds willing to provide liquidity. Liquidity providers earn from fees that are given upon their liquidity orders. Fees are chosen by the liquidity providers. They are given





freedom in regard to the amount of fee they decide to put on a particular liquidity order. That way they are incentivised to manage their risk strategy. In addition, they can preview their rewards and withdraw them.

- **performers** - people (or bots) executing orders. They look for orders that match and choose the ones from which they can earn. For example, Alice wants to trade 10A for 9B and Bob wants to trade 10B for 9A. If we take these two orders and execute them in one transaction, Alice gets 9B, Bob gets 9A, and the performer gets 1A and 1B. Performers want to be able to easily analyze existing DEX orders and be able to combine as many orders as possible into one transaction. To execute matches Performer has to stake a small amount of BYNET tokens.

Advanced calls

ByronDex distinguishes two modes in which a user can trade. The first one is a simple swap-mode, which is really similar to uniswap style with the option to choose slippage. The second one is more complex as it combines several types of orders. We call the second type an orderbook-mode. It comprises of order such as:

- **limit order** - type of order that allows one to buy or sell an asset with a given restriction on the maximum price one has to pay or the minimum price one has to get from the trade.
- **stop limit order** - type of order that combines the features of both stop orders and limit orders. Given a stop price has been reached, a





stop-limit order now becomes a limit order. As mentioned previously, this order will be executed at a particular price or at a better one.

- **stop loss order** - type of order that allows one to buy or sell an asset when the price of this asset reaches a predefined price, also known as the “stop price”. Given this stop price is reached, a stop order turns into a market order. A buy stop order enters at a stop price that is above the current market price, whereas a sell stop order enters at a stop price that is below the current market price.
- **stop market order** - type of order that allows one to buy or sell supposing the market price for an asset reaches a specified value. It is a type of stop-loss order that is supposed to limit the amount of investment that can be lost in one trade.
- **trailing stop order** - type of order that doesn't have a specified stop price value, but is described as a percentage or a dollar amount below or above the price of a particular asset.

Order Book Pattern

The BynetDEX model is based on Order Book Pattern (OBP) combined with a 2-phase commit pattern. The model distinguishes the commit and execution phases. In the committing phase, swappers submit crypto asset orders with an expectation of a particular amount of an opposite coin. The execution phase matches orders and performs them accordingly. Successful execution locks money in the script for the beneficiary. Similarly to CEX, the UI





will include a list of buy and sell orders, and with progress, the charts with market depth will visualize the current market situation.

Orders are the core of OBP. Order is represented as EUTxO, which contains all information needed to perform a swap on it. There are different types of orders making up the model. In the first version we implemented the following:

- **Sell order** - type of order that applies limit order features. It is given out by swappers with all necessary information. It contains the tokens that the swapper wants to replace and they can be used only when an appropriate payout is created for the owner of the order (UTxO, which can only be used by that person).
- **Liquidity order** - type of order prepared with liquidity providers in mind. It contains information about which two tokens (in specific their quantities) will be exchanged between each other, and the amount of the fee. Fee that is imposed by the liquidity provider is not specified, rather we want traders to apply a particular fee taking into account their risk strategy.

Liquidity Order use case:

A trader manually creates a liquidity order between 100A and 50B, with a commission of 1%. In the beginning, we create it as UTxO, and add 100A to it. If someone wants to receive 100A, they will have to create a new liquidity order, this time with 50.5B (101% of 50) Now the liquidity order has 50.5B and awaits at least 101A (101% of 100) meaning that if someone wants to get 50.5B, they will have put 101A in it. This works until the original owner cancels the order - then he receives all the





funds stored in this UTxO. The more swaps are made on this liquidity order, the more profit the person submitting it will receive.

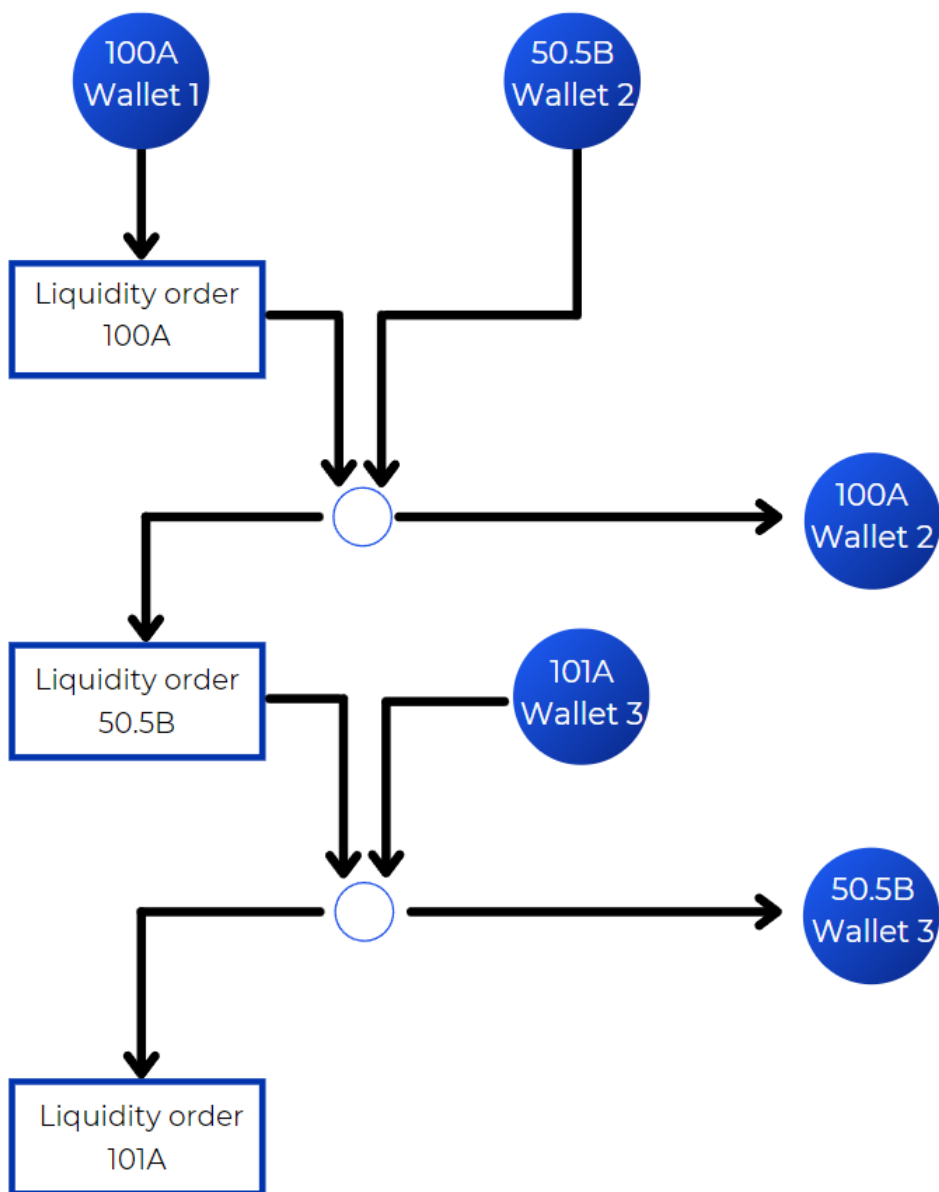


Figure 2. Liquidity Order use case





Liquidity Pools

Liquidity Pools are sets of discrete Liquidity Orders, where each order has a slightly different rate. The distribution of subsequent orders can be determined on the basis of the $x * y = k$ curve, but there is nothing to prevent the use of other curves as well. Every Liquidity Order is an independent exchange offer, but all of them together simulate the operation of the classic Liquidity Pool. The Liquidity Provider can add their funds in swamps of liquidity instead of through one or more Liquidity Orders with identical rates. Thus, his funds earn better in an environment of ever-changing cryptocurrency prices.

Imagine a traditional Liquidity Pool. It is some kind of a system containing large amounts of two different tokens, A and B, that allows pulling them out as long as certain rules are adhered to. For example, we can make it so the product of the quantities of both coins can never decrease, and each swap must additionally draw 0.3% less than it would like (a commission). If we analyze such a pool, it turns out that each consecutive swap of coin A for coin B is less and less profitable. If we were to establish that each swap could move only 100 coin A (and as much B as the algorithm of this pool requires), we could divide the entire pool into a set of independent exchange offers.

Not every offer is equally profitable - similarly to Order Book CEX, only some of the orders will be close to the market rate. However, when the global market price of coins fluctuates, the A to B swap offers will disappear faster than B to A (or vice versa). The situation will stabilize when the most profitable offer remains.





4.2. Bynet Wallet

Bynet Wallet is a HD Native Wallet for Cardano that is a part of the Byron Network ecosystem. As the first of its kind on the Cardano blockchain we plan to deliver not only best quality wallet, but also contribute to the community by developing mobile tools useful to developing mobile DApps on this particular blockchain. Cardano-synch-lib written in Javascript/Typescript is going to help grow the community of developers and ensure a smooth development process.

Wallet structure

Functionality of Bynet Wallet includes sending and receiving crypto assets on the given wallet address with mobile security. Due to the traders-for-traders approach the Wallet is going to be equipped with crypto portfolio management. Integration with BynetDEX will guarantee trading opportunities directly from the Wallet, taking the next step into better usability. Clear and intuitive design based on traders' experience makes the DApp user-friendly.

We understand that security plays a significant role when the topic of storing cryptocurrency arises. Certain solutions require different approaches to ciphering data so our team made sure to take into consideration both the market expectations and technical possibilities. Bynet Wallet guarantees multi-level security, as well as features such as biometrics, 2FA and PIN.

Future plans hold a lot of useful features, among which are buying ADA, readable wallet addresses or QR codes. Thanks to credit card integration on





the Bynet Wallet, the user will have easy access to buy this Cardano cryptocurrency. In addition, the Wallet is going to be available both on Android and iOS to guarantee accessibility for all.

Experience

As the first team that is delivering mobile DApp on Cardano we intend to focus on achieving a seamless crypto experience for the traders. As an app for traders it guarantees familiarity to CEX options. Multi-platform solutions account for a wider range of future possibilities and ways to scale. Trade on our DEX and you won't even feel blockchain underneath.

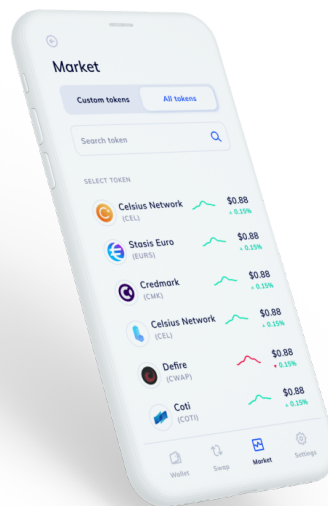


Figure 3. Bynet Mobile Wallet





4.3. Launchpad Toolset

Having our mission to contribute to the ever-growing blockchain community, we plan to deliver services that include toolsets necessary for crypto projects. Whether a project needs a particular software to be launched or prepares itself for crucial steps in its tokenomics, our team will be able to support it. We understand the need for professionally done and audited software products to ensure the best quality for their users. With our experience, we want to bring adjustable solutions that take care of matters surrounding token minting, token distribution, various types of offerings, tailor-suited smart contracts, and more decentralized implementations.





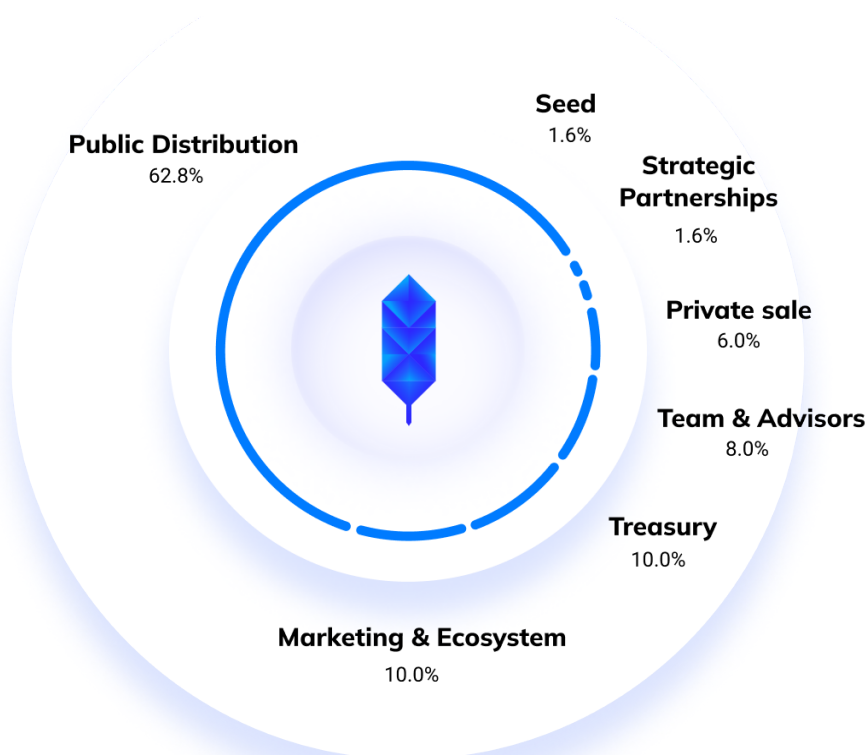
5. Tokenomics

BYNET token will provide incentivization on the BynetDEX, with 60% of the tokens being distributed for the community that actively uses the platform and add liquidity.

Since Byron Team focuses on trading risk control, advanced trading options will be available once a trader pays a small fee of BYNET tokens.

In addition, BYNET tokens will grant voting power to holders regarding tokens listed on the DEX, SPOs on Bynet Wallet or future functionalities in the ecosystem.

5.1. Distribution





5.2. Staking

It will be possible to stake BYNET Tokens in various options. Depending on the pool duration and individual strategy one can choose to stake on pools such as Fast Money, Visionary, Diamond Hand and WAGMI. Further information about APY is going to be disclosed soon.

Name	Pool duration
Fast Money	3 months
Visionary	6 months
Diamond Hand	12 months
WAGMI	24 months





6. Roadmap

- ✓ Participation in [Plutus Partnership Program](#) as [BinarApps](#)
- ✓ Recruitment of Haskell Developers
- ✓ Market research
- ✓ Simulator setup ([demo](#) during Cardano Summit)
- ✓ Create [web and swap design](#)
- ✓ Social media launch

Q3 2021

Q4 2021

- ✓ Create design of [DEX trading web](#) and [HD mobile wallet](#)
- ✓ UX audit
- ✓ HD mobile wallet [UI implementation](#) (React Native)
- ✓ [Whitepaper](#), [Lightpaper](#) and [presentation](#)
- ✓ Code optimization and testing
- ✓ BynetDEX MVP delivery - demo for IOHK

- ✓ Mobile wallet beta testing (iOS and Android)
- ☐ HD mobile wallet public release
in progress
- ☐ Seed and private sale
- ☐ IDO
- ☐ Public sale
- ☐ Advanced security measure on Bynet Wallet

Q1 2022

Q2 2022

- ☐ Integration of Bynet Wallet with BynetDEX
- ☐ Integration of Nami Wallet with BynetDEX
- ☐ Security audits
- ☐ BynetDEX on the testnet
- ☐ Code optimization
- ☐ BynetDEX on the mainnet
- ☐ Stop limit and stop loss on the DEX
- ☐ Buy with FIAT (mobile wallet)
- ☐ Trading API initialization





7. Future of Byron Network

Multi-chain is the future of any blockchain on the market. It creates a more open ecosystem, allows for freedom with different types of tokens or cryptocurrencies and lifts the burden of using additional decentralized apps. The mission of BynetDEX is to focus on delivering simplicity. User accessibility and user-friendliness are on our priority list. With multi-chain being on the horizon, connecting to another UTxO-based model will be among the first steps in this direction. With the experience gained while working with Dash.org, which is UTxO-based, we are confident in connecting this protocol with other blockchains to come.

