

NEXTGEN FINANCIAL ECOSYSTEM

# WHITEPAPER VERSION 1.0



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#### **SUMMARY**

Exscudo is the next-gen financial ecosystem. Its main goal is to integrate cryptocurrencies into the traditional financial world and to create a single gateway to the market for common users, traders, investors and financial institutions. This is the cryptocurrency liquidity center featuring a whole range of add-on services meant to improve users' experience. All Exscudo services are connected to the liquidity center via the company's own blockchain EON - this measure makes them more secure and transparent than existing cryptocurrency exchanges. The EON blockchain platform enables the whole system to be transparent without disclosing bank secrecy.

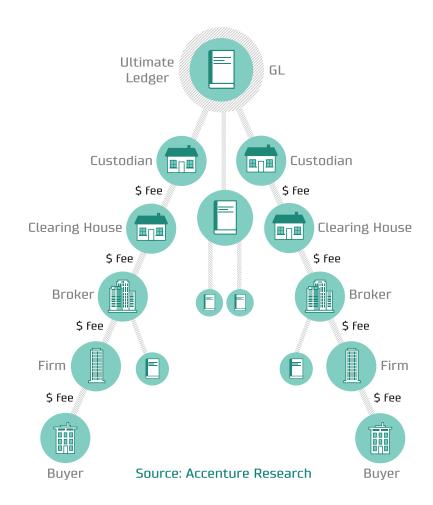
We are building a new financial ecosystem, that's why we do not want to attract venture capital to finance our product. We are going for an ICO instead, attracting the crypto community to be our stockholders. Every EON coin holder can start his or her own node, deposit the coins and get the commission from the transactions processed by the node.

Exscudo strives to make operations with cryptocurrencies legally compliant both for individuals and financial institutions, making it easy for them to enter the cryptocurrency market.



#### **Traditional Financial Market**

The traditional market has a complex structure, it is archaic and overly regulated. Here is an outline of how it looks like today:



The access to it is rather complicated for an individual. Besides, it involves a long chain of intermediaries, where everybody charges commissions, making the access to the market for those who would like to trade quite pricy. Such a structure prevents small individual capitals from entering the market.

Everybody has faced this problem if he or she tried to transfer money from one country to another or any other kind of international transaction - sometimes commissions are as high as 10% or more!

With cryptocurrencies the commissions are minimal and are equal to some fractions of a percent, and there is no threshold. The system makes microtransactions possible, which are quite problematic on the traditional market. Thus, what is left for the majority of small market



participants are high commissions, high spreads and exchange differences.

Nowadays capital markets tend to be simpler, direct access to capital for market participants, eradication of intermediaries and lower commissions.



Source: Accenture Research

Once the suitable technologies for the realization of these needs emerged, the market began to actively implement them. Thanks to blockchain technology and cryptocurrencies it becomes possible to renew the market entirely.

### Appeal of Cryptocurrencies for the Traditional Finance Market

Investment protection in times of crisis is one of the most important investment skills. Whenever some kind of natural, political or financial crisis breaks out, gold remains one of the best investment of your capital. Traditionally, gold and other precious metals are considered one of the best ways to hedge risks. However, cryptocurrency has recently become attractive from



investment point of view as an alternative to hedge against local political, economic and market risks. In addition, the growth potential of cryptocurrency is huge. High market volatility is attractive for traders. These assets have earned the reputation of an attractive object of highrisk and high-yield investments.

### Low Penetration of the Traditional Banking System

Another problem of the traditional financial system is low penetration of banking systems around the world.

According to recent studies of McKinsey&Company, about 2.5 billion of adult population all over the world do not have access to banks and microfinance institutions.

However according to the International Telecommunication Union, 47% of the world's population, or 3.4 billion people have internet access. Thus, for a great number of people, more than 2 billion around the world, the best tool to be involved in the global economy is to make online cryptocurrency transactions.

#### **Challenges of the Cryptocurrency Market**

Since 2009 the cryptocurrency market has gone from the very beginning to the formation of the basic structure. Despite the fact that the market has evolved, its members continue to face a number of difficulties at both technical, legal and product levels.

States endeavor to monitor the financial system and prevent the economy from growing in the gray zone. Due to the fact that many cryptocurrency projects operate in an unregulated area, states refuse to consider cryptocurrency as a means of payment at the national level. This is the reason for all the major legal difficulties of the cryptocurrency market. For this particular reason institutional investors can not enter the market because of concerns regarding client due diligence, the laws on anti-money laundering and other issues that arise in connection with the cryptocurrency pseudonymous nature.



Technical issues are associated with the complexity of blockchain and cryptocurrency technologies for everyday users. There are few convenient integrated products on the market, which could become a single point of access to the market for everyone.

It is difficult for an average user to create a cryptocurrency wallet to keep his assets safe.

Some other technical issues are related to scalability of existing blockchain technologies, bandwidth, the size of blockchain and vulnerability to SPAM attacks. Besides, a number of modern cryptocurrency exchanges were created by enthusiasts, which were not proficient in the sphere of IT-security which results in possible vulnerabilities of the exchanges.

Some technical difficulties are also connected with the consensus algorithm: PoW (proof-of-work) leads to the mining centralization; and existing PoS (proof-of-stake) consensus algorithms allow use of various types of attacks.

One cannot deny the issue of hyper-volatility of markets in conditions of limited supply. With high regional fragmentation of markets, isolation of funds of the exchange order books (with separate margin trading and separate exchange operations) and the absence of a large and single center of liquidity, market makers can easily manipulate cryptocurrency prices.

In addition, the fragmentation of the market affects the issue of the optimal price choice. Traders need to gather information from dozens of websites, web forums and other sources to make a simple choice concerning the price.

Another urgent problem of cryptocurrency markets lays within the lack of high-tech solutions with a high degree of technical security and legal protection of assets, high-performance architecture platforms and professional tools for trading. This is another reason why institutional investors still cannot enter the cryptocurrency market.

Because of all the problems mentioned above the spread of cryptocurrencies on the traditional financial market is rather low. These challenges limit the involvement of



new user segments, which slows down the penetration of cryptocurrency into new regions.

According to the latest Juniper Research, by 2019, the number of active Bitcoin users can get closer to 5 million. However, now the blockchain network has reached its capacity limit of 350 thousand confirmed transactions per day - if we compare it with the traditional financial market, then PayPal at the same stage of development had more than 100 million active accounts, all this despite the fact that it worked with a less developed IT infrastructure and besides required passport data of the user for authentication.investment point of view as an alternative to hedge against local political, economic and market risks. In addition, the growth potential of cryptocurrency is huge. High market volatility is attractive for traders. These assets have earned the reputation of an attractive object of high-risk and high-yield investments.

There is a large number of start-ups, but the market is still undergoing its infancy. There is a lack of professional and user-friendly, scalable infrastructure products for the propagation of cryptocurrency to the mass market and involvement of users from the classical market.



The main goal of the project is the integration of cryptocurrencies with the world of equity and financial markets. We strive to let every person who has access to the Internet into the cryptocurrency market simply, quickly, legally and securely. Exscudo solves almost all of the aforementioned problems found on the cryptocurrency market:

#### **Trading and Investment**

A long chain of intermediaries on fiat exchanges may ruin your trading experience. 2.5 bn people worldwide are unbanked and do not have access to any financial system.

Exscudo provides an opportunity to trade in the open market with minimal commissions from any device connected to the Internet. Users can invest, trade, purchase and manage funds from one single account.

#### **Versatile Trading Tools**

Many cryptocurrency exchanges are limited only to buying and selling currencies and offer the same trading interfaces for beginners and experts.

The Exscudo exchange features web, mobile clients and a professional trading terminal. The interfaces are both user-friendly, adaptable to the needs of experienced traders and include all the necessary graphs and indices.

#### **Data Security**

The majority of wallets and exchanges are susceptible to hacks. Data transmission and storage becomes even more challenging.

Exscudo solves the problem of security. EON, our proprietary blockchain platform, provides for independence, decentralized data access and transaction encryption. Exscudo Channels is a safe way of messaging and transferring money.



#### **Legal Compliance**

Institutional investors do not enter the cryptocurrency market due to legal restrictions. This is also one of the reasons why retail companies do not accept payments in cryptocurrencies.

Exscudo grants financial institutions legal access to cryptocurrencies. Our Merchant Platform lets stores accept cryptos. To comply with international and national legislation, Exscudo is getting all necessary licences in the country of residence in the EU.

Our task is to provide users with professional tools for legitimate trading, ensuring a reliable technical and legal protection of their financial assets.

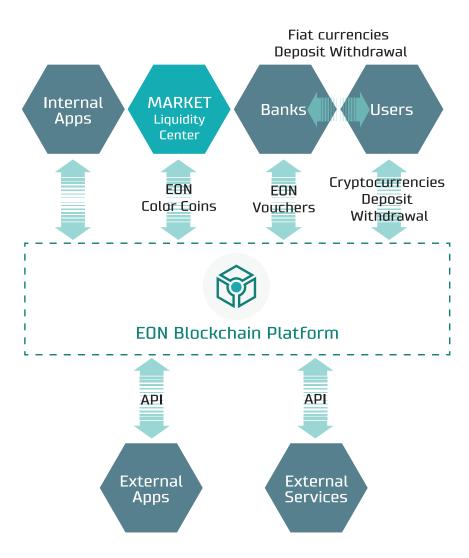
We are creating a center of cryptocurrency liquidity - a market in which people without access to banking ecosystem can just buy and sell digital assets as easily as institutional investors.

Exscudo's main task is to provide an ultimate trading and exchange functionality for different client groups:

- Simple operations and one-click services for those who only need a simple way to buy or sell cryptocurrencies;
- Advanced functionality with automatic trading and unique strategy development tools for professional traders;
- Simple gates and other features for stores and cryptocurrency ATM networks.

Another one of Exscudo's priority is to grant private and institutional investors access to operations on both crypto and fiat currency markets that are fully compliant with the corresponding rules and regulations. This means that we are integrating our payment system with the banking system. The underlying technology is EON, a blockchain network developed specially for financial applications. EON has the functionality of smart transactions that handle the interaction of the elements of the Exscudo Ecosystem.

Every user can monitor the anonymized transaction history in the blockchain through the block explorer. This grants the transparency of capital flow and eliminates the necessity of trust to financial reporting of the exchange, since any transaction can be viewed in the open blockchain. This innovation makes for transactions transparent and prevents any possible fraudulent activities by the payment operators.



The Exscudo ecosystem includes a number of services - tools for both private investors in crypto-currencies and for financial institutions. Due to the EON-blockchain all our solutions work together sharing within the ecosystem.

The Exscudo services can be divided into the following groups:



#### **Business Tools**

- Merchant Services
- Gates



#### **Trading instruments**

- Web
- Mobile clients
- Terminal
- API/WebSocket



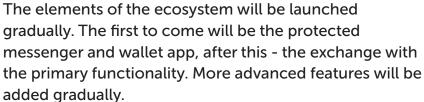
#### **Analysis**

- Graphics and Listings
- Analysis and reports
- News



#### **Bank services**

- Wallets
- Cards





## EXSCUDO PRODUCTS BRIEF DESCRIPTION

The Exscudo ecosystem contains many products and services that are united by our innovative proprietary blockchain technology, EON.

#### **Trading platform**

**Exchange.** The digital finance marketplace for beginners, professional traders, financial institutions and institutional investors

**Charts.** All data from trades on the cryptocurrency market is located in one place and updated in real time.

**Trading terminals.** Trading terminals with a wide range of tools for professionals that are designed just as usable as on traditional exchanges.

### Multicurrency wallet and protected messenger app

A mobile application combines the functions of a wallet and a messenger. It becomes another access point to users` personal accounts and Exscudo services. The application supports multi-currency wallets, and a decentralized messenger that allows users to send money directly within their chats.

#### **Debit Cards**

One card to rule them all. A debit card that is connected to the user account and has the option to exchange currencies in real time. For example, one can pay for his or her groceries with cryptos using with card.

#### **Merchant Tools**

Our merchant is a ready solution for the acceptance of crypto currencies for goods and services. It was developed specially for e-commerce businesses and internet services.

#### **EON**

We created our own blockchain platform for integration and proper functioning of all services within a joint network.



#### **AUDIENCES**

This infrastructure is meant for both users of traditional financial services and cryptocurrencies. These are the segments of people that will benefit from Exscudo projects:

#### **Individuals**

- Cryptocurrency miners;
- Private investors and traders;
- Users of internet-services that accept cryptocurrencies for payment;
- Freelancers and entrepreneurs.

#### **Business Entities**

- Institutional investors (commercial banks, investment banks, brokers, dealers, pension funds, insurance companies, international companies);
- Internet stores and companies which own cryptocurrency ATMs.



#### **Trading Platform**

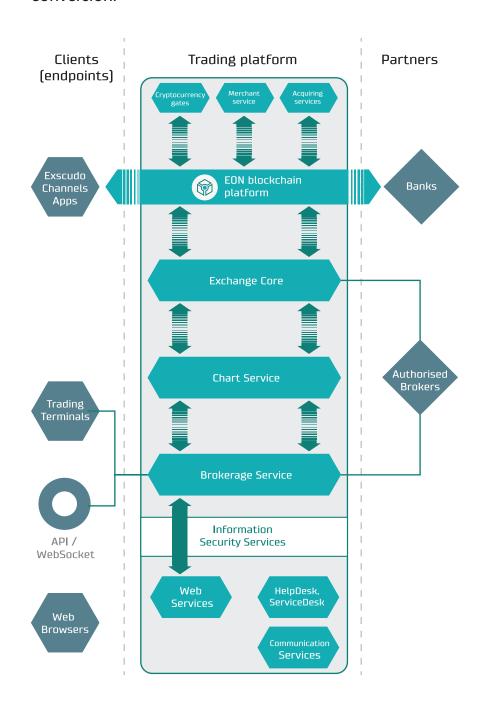
The architecture of the Exscudo trading platform is built to provide full-fledged trading and exchange capabilities with advanced instruments and the possibility to trade any popular currency pair.

The Exscudo environment with its trading platform and auxiliary systems are shown below:



#### **Trading platform**

The trading system solution consists of several components that guarantee robust trading and conversion:



### **Exchange Platform (the Core of the Exscudo)**

The Exchange is fully compliant-oriented and has an advanced security system. All transactions are powered by the EON blockchain network and run within the system without relying on any third-party services. The Exchange delivers the ultimate trading experience due to an adaptable user interface that is extremely easy-to-use for beginners but also multifunctional with professional tools for experienced traders.

The trading system is the liquidity core for the whole Ecosystem. Users have the options of simple exchange and margin trading within one order book, to make the assets even more liquid.

The Exscudo trading exchange provides all types of trading from simple trading tools, such as margin trading, to some more complex instruments. This is the list of the instruments supported by the exchange:

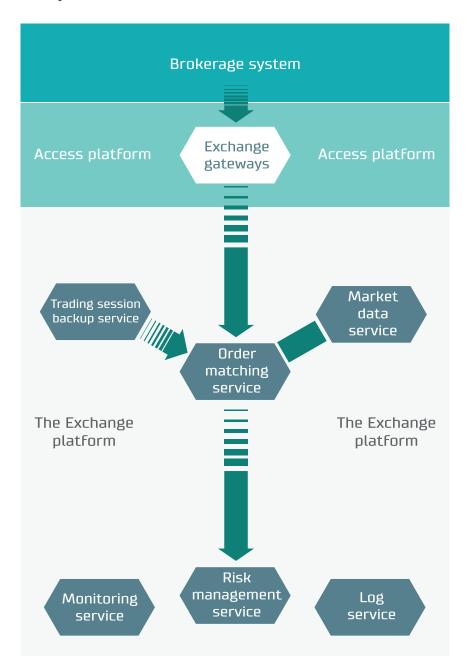
- full provision trading;
- margin trading;
- options;
- futures;
- settlement contracts.

The exchange structure is illustrated below and consists of the following modules:

- Exchange Gateway, which provides access to trading brokerage subsystem and/or third-party brokers by means of standardized FIX/FAST protocols;
- Order matching service, which validates, registers, and matches traders orders;
- Market data service, which validates and transmits market data (quotes, orders, trading instruments etc.) into the brokerage subsystem;
- Trading session backup service, which saves a trading session data for archival storage and session restart;



- Risk-management service verifies orders for sufficiency of funds;
- Monitoring service, which gathers metrics of the exchange and monitors its software and hardware status;
- Service writes and saves logs of the exchange system.



#### **Brokerage System**

To allow traders to use their own trading bots, do arbitrage and use their own trading software the Exscudo provides:

- API/WebSocket for users;
- API for prime brokers, a subsystem for authorized brokers.

The brokerage system realizes:

- user registration in the system;
- authentication, authorization and audit of user activity in the system;
- user access to real time market data;
- user access to historical market data;
- market data graphs display;
- maker/taker commission charge;
- making of monthly and on-request brokerage reports;
- provision of software APIs and client libraries for trading automation;
- security measures against unauthorized access to brokerage and exchange subsystems.

#### **Market Data Server**

Our server gathers data, not only from Exscudo, but also from others trading platforms to represent more information about the market to traders.

#### **Trading Terminals and Web-interface**

The Cross-platform trading terminal supports the following platforms:

- Web;
- Mobile (iOS, Android);
- Desktop (Linux, MacOS, Windows).



The terminal delivers full support of exchange functions, with a wide range of analytical possibilities, support of different types of orders, online-listings, interactive graphs and technical indicators, trading signals and copies of transactions. The powerful trading system allows traders to opt for complicated strategies.

#### **EON**

To gain independency from third-party developers, Exscudo uses its own distributed network called EON. This technology allows Exscudo to handle transactions between the Exscudo Stock exchange and international banks, as well as cryptocurrency wallet users and fiat accounts holders. EON is the fuel that empowers the whole system. It uses smart transactions algorithm that is similar, but not equal to the smart contracts mechanism of the Ethereum network. For security reasons, only the Dev team will be able to add new smart transactions to the network at this stage.

EON is not a fully open source project, but the parts that cover the rules of the consensus, emission and block confirmation will be published on Github. The part that deals with the Exscudo Stock Exchange is classified. You can learn more about EON on its website.

Thanks to our EON blockchain, market participants have direct access to the capital market. Exscudo's goal is to provide everyone, even unbanked people, with the opportunity to enter the market on an equal basis with institutional investors and professional traders.

EON gives a number of advantages to the financial market:

- ecosystem simplification;
- fast clearing;
- low operating costs;
- low counterparty risk;
- transparency and verifiability;
- friendly software development environment.

#### **Exscudo Channels: Secure Chat-wallet**

This is one single application that unites the functions of a multi-currency wallet and an encrypted messenger. It allows for easy access to the personal account and financial services of Exscudo. The multicurrency wallet allows the user to manage cryptocurrency accounts at any place and time. It helps execute internal transfers between accounts with instant conversion on the exchange at market rate and to make payments through NFC on mobile clients (PayWave).

The payment systems are integrated with the liquidity center which allows them to use the relevant exchange rate, a minimum commission for conversion, as well as to reduce the time for conversion and the time period required to transfer the funds to the account.

Decentralized messenger for secure communication and the option to make financial transactions directly on the chats. You can communicate confidentially and transfer funds safely, simply by sending a message to your contact. Despite the usual private conversations, users can create and join free and paid public and private channels. This provides a wide range of opportunities not only for cryptocurrency users, but also for media, bloggers and public persons.

### How EON Blockchain Conducts Transactions of Exscudo Channels App

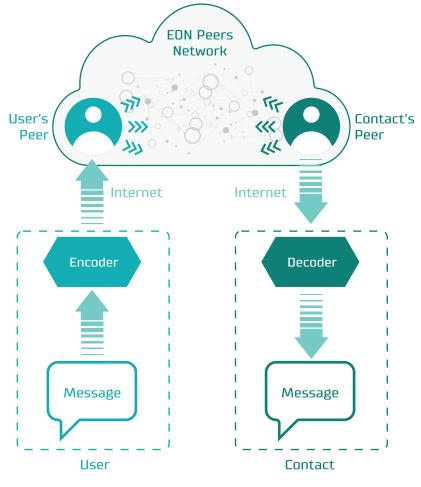
A user is sending a message.

His or her contact is receiving the message.

- 1. The user enters the message and hits 'send' button;
- 2. The message is encoded with the public key of the contact;
- 3. The encoded message is sent to a peer;
- 4. The peer lists the message as 'unverifiable' (which is not included in the blockchain);
- 5. The message is transmitted to other peers;
  - a. If the message contains text, '5-handshake' rule works:



- i. every peer chooses a random peer every second;
- ii. that random peer transmits all the messages to the current peer;
- iii. all the received messages are listed as 'unverifiable'.
- b. If the message contains a payment transaction, it will be included in the blockchain:
  - i. the peer generates a block;
  - ii. the transaction in the block becomes verified;
  - iii. this blockchain spreads to other peers.
- 6. The contact's peer receives the message;
- 7. The contact requests all the unreceived messages from the peer;
- 8. The message is received by the contact's device;
- 9. The message is decoded and displayed in the chat.





#### **Debit Cards**

Debit Cards are connected to the user account and provide the option to pay and exchange currencies in real time.

This is the most simple connection for the user between the classical financial market and the cryptocurrency market. Simply deposit the fiat or cryptocurrency on your account in the Exscudo wallet and the card is ready to be used. The currencies are exchanged for the price of the Exscudo Exchange at the moment of purchase. The card is accepted all over the world for online purchases and in brick-and-mortar stores with minimum commissions.

#### **Merchant Tools**

It is the fastest, safest and cheapest payment method for clients in terms of commission, the merchant features low commission, compared to fiat currencies and a multitude of supported cryptocurrencies for payment. It has ability to generate reports for points of sale. This is a solution for business entities that are willing to accept cryptocurrencies and may or may not wish to deal with them directly. The cryptocurrencies accepted from customers can be automatically converted into fiat currencies and transferred to the company's bank account. The currencies are exchanged for the price on the Exscudo Exchange at the moment of purchase. This eliminates the problem of exchange differences and allows for a minimum spread. This merchant platform enables the company to operate and accept cryptocurrencies legally.



### EXSCUDO BUSINESS MODEL

Exscudo monetization principles vary from product to product. Our key products monetization methods are listed below:

**Trading platform:** fiat deposit/withdrawal commission, account maintenance commission, execution of order commission.

**Wallet:** fiat deposit/withdrawal commission, account maintenance commission.

Secure messenger: transaction commission.

**Cards:** account maintenance commission, currency exchange commission, fiat withdrawal commission.

**Merchant platform:** account maintenance commission, currency exchange commission, fiat withdrawal commission.



### MARKET ASSESSMENT (TAM SAM SOM)

Exscudo project works in a number of related markets and bridges them together. It provides trading instruments and services for the cryptocurrency market and opens it for professional investors.

To assess volumes of the markets mentioned above, the information can be represented in tables below:

	Over-the-counter cryptocurrency market	Cryptocurrency exchanges market	Financial market (USA, Europe, China&Asia)	Stock market (USA, Europe, China&Asia)	Total market volume (for stock exchange EXSCUDO products)	Global credit/debit card payments market	Digital payments market	P2P payments market	Total market volume (for EXSCUDO financial products)
TAM (Total Available Market) Focus on: Total maket/size									
Daily trading volume, \$ mln	150,0	60 000,0	5 000 000,0	125 000,0	5 185 150,0	-	-	-	-
Monthly trading volume, \$ mln	4 575,0	1 830 000,0	105 000 000,0	2 625 000,0	109 459 575,0	18 925,0	140 000,0	52 250,0	211 175,0
Annual trading volume, \$ mln	54 900,0	21 960 000,0	1 260 000 000,0	31 500 000,0	1 313 514 900,0	227 100,0	1 680 000,0	627 000,0	2 534 100,0
Annual growth of trading volume	93,0%	41,2%	~40,0%	~20,0%	-	16,0%	12,0%	9,0%	-
SAM (Serviceable Available market) Focus on: Own technology/services	20,0% TAM	80,0% TAM	0,1% TAM	0,1% TAM	_	0,1% TAM	0,1% TAM	0,1% TAM	_
Daily trading volume, \$ mln	30,0	48 000,0	5 000,0	125,0	53 155,0	_	-	-	_
Monthly trading volume, \$ mln	915,0	1 464 000,0	105 000 000,0	1 625,0	1 571 540,0	18,9	140,0	52,25	211,15
Annual trading volume, \$ mln	10 980,0	17 568 000,0	1 260 000 000,0	31 500,0	18 870 480,0	227,1	1 680,0	627,0	2 534,1
SOM (Serviceable Obtainable Market) Focus on: Which realistic market share									
Daily trading volume, \$ mln	27,9	19 776,0	2 000,0	25,0	53 155,0	21828,9	-	-	-
Monthly trading volume, \$ mln	850,95	603 168,0	42 000,0	325,0	1 571 540,0	646343,95	-	-	-
Annual trading volume, \$ mln	10 211,4	7 238 016,0	504 000,0	6 300,0	18 870 480,0	7 758 527,4	-	-	-

#### **DEVELOPMENT**

Our cohesive and professional team have developed projects for over several years now. A very important advantage of the project is an extremely rare combination of competencies and experience of the founders and the technological team, namely:

- IT security;
- cryptography;
- blockchain technologies;
- exchange platforms and trading terminals;
- merchant and banking systems;
- crucial IT-projects for leading russian and international companies;
- back-end development of leading cryptocurrency exchanges.



#### DEVELOPMENT

#### Roadmap



- Developed proprietary blockchain-platform
- Developed basic market core
- Developed listings server and basis for the trading exchange functions
- Developed functional multi currency wallet on the basis of the proprietary blockchain-platform

#### 2015

- Renewed core of the exchange, expanded functions
- Completion of the development of the blockchainplatform with the support of user groups and multiple subscriptions
- Development of functional decentralized secure messenger
- Expansion of the exchange functions and the development of the market data server

#### 2016

- Expansion of exchange functions
- Expansion of the listings function of the exchange
- Expansion of trading functions of the exchange
- Redesign of the EON blockchain technology, expansion of the blockchain functions



#### DEVELOPMENT



- Launch of the Channels chatwallet app (decentralized secure messenger and multi currency wallet) (Q1/Q2 2017)
- Open beta testing of the exchange (Q2 2017)
- Launch of exchange services (listings server, webservices of multi currency wallet) (Q2/Q3 2017)
- Launch of trading on the exchange (Q2/Q3 2017)
- Launch of the mobile phone trading terminal for Android (Q2/ Q3 2017)
- Launch of the mobile phone trading terminal for iOS (Q2/Q3 2017)
- Launch of accounts with the integration of fiat currencies and launch of branded cards (Q2/Q3 2017)

#### 2018

- Launch of the merchant-platform (Q1/Q2 2018)
- Launch of the trading platform with expanded functions (Android, iOS, Desktop) (Q1/Q2 2018)



Unfortunately, existing blockchain systems could not give us enough flexibility, functionality and independence from third parties, which motivated us to develop our own blockchain platform - EON.

EON is a decentralized blockchain-based platform that provides the infrastructure for the Exscudo services. This platform is not an alternative for Bitcoin, Ethereum and any other altcoin - it was created to solve specific tasks within the Exscudo system. Some existing blockchains either do not have any long-term roadmaps, or have flaws in their architecture.

EON is not superior to any leading blockchain-based platforms, but it enables Exscudo to be independent and launch new functions when it is needed.

The architecture of EON is based on a simple core. The core calculates a math model and has a number of services connected to it. These services add more functionality to the Exscudo system.

EON blockchain is not open source, 95% of the code is proprietary. However all the parts concerning consensus rules, coin emission and block confirmation will be published on GitHub. Open source code allows the community to audit these parts of the system, create their own coins based on EON and to integrate their projects into the Exscudo system.

#### **EON Blockchain Basic Principles**

#### **Data Exchange**

All the nodes are passive. This means that the system does not use any broadcasting to spread information among the nodes. Data exchange is performed according to two principles:

- 1. Storage of new user transactions;
- 2. Requesting nodes to share new data.

There is no node which 'knows' everything about the system. It just connects to random nodes.

If the node which receives request behaves outside the framework defined by the model, it is placed in the black



list. After some time the blacklisted node will go into 'read only' mode - it will not participate in the generation of new blocks. If there are several such nodes, then after a while they will be 'sorted out' from the main network.

The algorithm of data distribution over the network provides for their random spread, i.e. no one can find out from which particular node the data came into the network. The node checks all incoming data: if the transaction does not have a valid signature, or does not pass the parameter check, it is rejected and not processed. Each transaction type is checked in accordance with its logic.

#### **Transactions**

The term "transaction" is used to denote a data packet signed by the sender, which contains a description of some action - an atomic change in the state of the system. Any particular action of a user is sent to the system by means of a particular transaction.

EON transactions, unlike Bitcoin transactions, do not have locking scripts. Instead, explicitly defined user profile links are used to identify the sender and the recipient.

Each transaction contains the following data:

- its creation time;
- its lifespan time in case it is not included in the block;
- base transaction link, which is included in the blockchain earlier;
- recipient address;
- commission amount in EON coins;
- the data itself;
- sender address;
- sender signature.

#### Signature

Digital signatures are based on the elliptic curves algorithm EdDSA, or rather its accelerated and enhanced



version - Ed25519. This algorithm was developed and implemented by Bernstein (<a href="https://cryptojedi.org/papers/ed25519-20110926.pdf">https://cryptojedi.org/papers/ed25519-20110926.pdf</a>).

For transactions performed on behalf of an aggregator profile, a multi-signature is used. For example it can be a "settlement account", the withdrawal of coins from which is carried out by voting of several managers.

#### **Accounts**

The term 'account' is used to refer to a member of a system that can act as a sender or recipient of transactions. Transactions sent on behalf of an unknown account are not accepted for processing.

Each account has an address. This address is formed on the basis of a public key. The state of the account at a particular time is determined as the result of the execution of a sequence of atomic actions described by transactions.

To register a new account, the system uses a transaction of the appropriate type which allows you to transfer the data necessary to verify the transactions sent on behalf of this member to the network. In addition to saving the above data, this will eliminate the danger of sending coins to a non-existent account.

The registration transaction does not contain a commission, this moment opens technical possibilities for organizing a DDoS attack. Protection is ensured by the fact that registration transactions have a minimum priority and are included in the block last.

#### Consensus

New blocks are added in equal time intervals.

Each node can offer its own variant of a new block, if it has synced its chain with at least one more node. To perform chain synchronization between nodes, a comparison between their cumulative complexity is made and the more complex variant is chosen.



The cumulative complexity of block B is calculated by the following rule:

#### D=Dprev+bal(A')\*M/hash(hash(Bprev),A)

- 1. It takes generation signature (hash Bprev) in the previous block.
- 2. To verify the ownership of the address, it is signed using the user key of the generating block (A).
- 3. The scope of the hash function (M) is divided by the value obtained from the first 8 bytes of the signature.
- 4. To obtain a new cumulative complexity, multiplication of the value obtained at step 3 and the amount of deposited funds (balA ') is made.
- 5. Complexity of the previous block (B prev) is added.

In view of the fact that keys corresponding to users are publicly known, each participant can check the complexity himself.

It is clear from the equation that there is a restriction on the signature of blocks in the network. Blocks in the network can only be signed by delegates who must confirm their obligations by depositing funds through issuing the relevant transaction. The size of the deposit must exceed the minimum value in XXXX coins (the exact value will be announced at the official launch of the network).

A delegate can withdraw the deposited funds through a reverse transaction. The delay in withdrawal of funds from the deposit (the duration of the guarantee period) exceeds the maximum depth of branching.

Half of the fee for the released block, which is equal to the amount of commissions for all block transactions, is sent to the account that issued the block for its generation. The other half is distributed according to the algorithm.

You can find more details about the rules of the EON network in the official whitepaper on the website <a href="http://eontechnology.org">http://eontechnology.org</a>



#### **Exscudo Integration**

The majority of the code of the Exscudo ecosystem is proprietary because of our security policy. However we try to make the ecosystem as transparent as possible to the community and open to integration with other services and platforms.

We will publish the source code concerning consensus rules, coin emission and block confirmation on GitHub. The description of the mathematical model is available in the EON whitepaper on the site eontechnology.org.

For more information on building additional services and applications on EON, integrating new smart transactions (smart contracts) into the blockchain platform third-party devs should contact our team for additional information.

In the future we will release API for merchant services and API for exchange trading, which will allow many services to be integrated into our ecosystem.

#### **Security and Audit**

In the second quarter of 2017 we are conducting an external independent security audit of the EON blockchain. During 2017 we are conducting an external security audit of all components of the exchange ecosystem.

In addition, during 2017 we will conduct an external independent audit of the public part of the ecosystem and all innovations that we will use to work with banks and external services.

We will publish the source code concerning consensus rules, coin emission and block confirmation on GitHub. The description of the mathematical model is available in the EON whitepaper on the site eontechnology.org.

Our philosophy is based on three main principles:

- 1. Creating a reliable technology platform with deep protection from external threats.
- 2. Protection from human factor and human errors.
- 3. Protection against unauthorized access to insider information.



An important component of our protection is the EON blockchain, which allows us to eliminate direct access to cryptocurrencies and store them in secure cold wallets, and to store fiat currencies in a bank account.

Due to the blockchain platform and Colored Coins technology, trading on the exchange is carried out through the exchange of colored coins, which are equivalent to and can be redeemed for the corresponding cryptocurrencies and fiat currencies.

In addition, due to the team's high competence in building banking and exchange products, we use advanced architectures and security solutions in our products.



#### **ICO Goals**

In Exscudo, we are building a new architecture of the financial ecosystem and therefore do not want to follow the standard pattern, the beaten path of centralized venture financing, creating another tool of the old economy, as so we are holding an ICO. And we invite the community to become our shareholders.

One of the main objectives of the ICO is the launch of the decentralized EON network, and the organization of the collective ownership of the EON network.

Every EON coin holder can start his or her own node, deposit the coins and get the commission from the transactions processed by the node.

In addition, due to the capitalization of the network, we plan to accelerate the launch of the products of the Exscudo ecosystem to the market. And also to ensure high liquidity of the Exscudo ecosystem, in order to provide the community with low fees for financial transactions in the ecosystem.

#### **ICO Plan**

The ICO will be held in one stage, which will last 37 days, from April 25 to May 31, 2017.

A few weeks before the ICO, coins pre-order will be launched. You can book some volume of EONs in your account before the ICO starts.

Those who book the investment package in advance and buy them out within the first 48 hours during the ICO will receive a 10% bonus in the form of additional EONs to the account.

All pre-orders will be listed in one common 'book' and will be closed upon the appropriate payment within 48 hours from the start of ICO in higher priority than other orders.

Besides, those who buy non-reserved coins during the first week of ICO are awarded with 5% bonus coins. During the second week the bonus is 2.5%. There will be no bonuses during the third week and later.



In addition, all those who participate in the ICO will receive a bonus for their personal account on the stock exchange. Everyone who participates in the ICO will get a zero commission for all operations on the exchange for a daily trading-exchange volume equal to the amount invested. This lifetime privilege is assigned to your account.

All pre-sale coin orders will be listed in a single orderbook. The coins that have been reserved in advance can be redeemed within 48 hours of the start of the crowdsale. At the same time, payments received for the purchase of the coins in the first 48 hours will be closed according to the priority order from the orderbook.

Payments received outside the presale campaign will be closed in the order in which the payments are received.



#### **Coin Emission and Distribution**



For Sale and Distribution	65,0%	156 600 000 EON
For investors	62,8%	150 720 000 EON
ICO Bounty campaign	1,0%	2 400 000 EON
Bug-Bounty and Testing	0,2%	480 000 EON
Advisers and ambassadors	1,0%	2 400 000 EON
Held in house	35,0%	84 000 000 EON
Held in house  Technical coins	<b>35,0%</b> 20,0%	<b>84 000 000 EON</b> 48 000 000 EON
Technical coins	20,0%	48 000 000 EON

ICO Bounty Campaign - 1,0%	100,0%	2 400 000 EON
Twitter reposts	15,0%	360 000 EON
Facebook reposts	15,0%	360 000 EON
Blog articles	10,0%	240 000 EON
Help with media publications	15,0%	360 000 EON
BTT translation & moderation	15,0%	360 000 EON
BTT signature campaign	30,0%	720 000 EON



#### 62.8%

of all coins will be distributed to the community during the ICO.

#### 15%

of all coins will be distributed as options among the members of the team and the supervisory board.

#### 20%

of all coins will be allocated to the technical fund for the initial stabilization of the network. They will not enter the market in the next a few years as they will be deposited on corporate Exscudo nodes. Later, as soon as the network has reached the necessary level of decentralization, the destiny of these coins will be determined by the company's board of directors.

#### 1%

of the coins will be distributed during the bounty campaign.

#### 1%

of the coins are allocated as remuneration to advisers and ambassadors of the project.

#### 0.2%

of the coins are reserved for the Bug-Bounty and platform testers.

In the event that not all of the coins allocated for investment are sold during the ICO, 50% of the remaining unsold coins will be distributed among the ICO participants, in shares equal to possession of the tokens at the time of the ICO's end.

The shares of the Exscudo team, the board of directors, the share of technical coins, the Bounty campaign coins, and the coins of advisors and testers will not participate in the distribution of the unsold portion of the coins.

Out of the remaining 50% of unsold coins we will form a non-profit Exscudo fund, its main task will be scientific development of the EON blockchain and Exscudo security systems.

The starting price of the EON coins will be announced before the ICO.

#### ICO Key points. Development Plan.

This is a preliminary plan of the Exscudo development depending on the sum of invested funds during the ICO:

#### 1000 - 3500 BTC

- Sometion of a decentralized EON network.
- Expansion of the ecosystem products to the second stage.
- Expansion of the ecosystem products to the 3rd stage.
- Certification of the company as a financial institution in accordance with international standards.
- Seneral marketing and product launch.

#### 3 500 - 10 000 BTC

- Increase of the liquidity of the ecosystem in fiat currency to reduce commission and time delays when working with fiat currencies through our partner banks.
- Opening of the company's operational offices in China, USA, Great Britain.
- Local procedures of legal conformity in some countries which will enable us to work with financial institutions.
- Local marketing in selected countries.
- Somplete external, independent security audit.

#### 10 000 - 20 000 BTC

Further increase of the liquidity of the ecosystem in fiat currency to reduce commission and time delays when working with fiat currencies through our partner banks. The second phase of the liquidity increase is required due to the growing number of users, and hence the increase in the number of international transactions.



Expansion into countries with a large share of "unbanked people" and unstable national currencies. Promotion of Exscudo as an alternative to the standard payment system.

#### 20 000 BTC +

Surther increase of the liquidity of the ecosystem in fiat currency to reduce commission and time delays when working with fiat currencies through our partner banks.

#### Why Invest in EON

In the Escudo ecosystem one basic type of coin is used: EON.

It assumes there are 2 types of income.

- Commission for owners of running EON network nodes, confirming transactions in the network.
- Speculative income. The number of coins is limited, their emission will be carried out at a time in the amount of 240,000,000 EON. Additional emissions are prohibited according to the consensus rule laid down when the network is launched.

#### **Bonus**

The sum a user invests into the project during the ICO is equal to the sum that can be traded daily with zero commission on the Exscudo Exchange. This privilege is granted to the user account for life.



# USER CASES AND PROBLEMS SOLVED BY THE EXSCUDO ECOSYSTEM

#### **Trading Platform**

For miners: Exscudo offers a large range of cryptocurrency pairs to trade in comparison with the mainstream crypto-currencies and fiats. It offers extended functionality for trading (mobile platforms, web-platforms), ease of withdrawal to fiat, reliability (developed technology to protect against DDOS attacks) and protection against hacks.

For private investors: We provide guarantees of system reliability through innovative and patented technological solutions. Reliability of deposit preservation, flexibility in currency transactions, expanded functionality for trading.

Institutional investors (commercial banks, investment banks, brokers and dealers, pension funds, insurance companies, multinational companies): we offer professional toolkit for trading cryptocurrencies, API and WebSocket, very high processing speed of trade transactions. Accumulation of all liquidity in one order book.

#### Wallet

It is a combination of the payment system with a liquidity center that provides real market rates to exchange currencies, charge minimum commissions and makes all money transactions faster.

#### **Secure Messenger**

It solves the problem of confidentiality and security of communication during simple chats or serious communication (e.g. negotiations), as well as communication during direct money transactions.

#### **Debit Cards**

Exscudo-cards issued by partner banks solve the problem of payment in the traditional market from your Exscudo account which may contain both cryptos and fiat.

#### Merchant tools

This tool allows to accept cryptocurrencies as a means of payment in Internet services and online stores, as well as



# USER CASES AND PROBLEMS SOLVED BY THE EXSCUDO ECOSYSTEM

instantly exchange them in fiat funds and transfer them to a bank account. The problem of exchange rate difference is solved, since the currency is converted "instantly" on the exchange.

#### **EON**

Our blockchain EON allows to incorporate into the system various fiat services and platforms with highest as possible protection.

Advantages of EON on financial markets:

- ecosystem simplification
- fast clearing and order execution
- low operating costs;
- low counterparty risk;
- transparency and verifiability;
- friendly software development environment.



## WHAT MAKES EXSCUDO SPECIAL? CONCLUSION

Cryptocurrencies are changing the world right now, solving the problems of trust and security, uniting financial institutions, big investors, everyday users, representatives of small, medium and large businesses into a single global system. All these users can interact directly with each other since Exscudo eliminates the need for a long chain of intermediaries and excessive commissions. A single liquidity center ensures the interaction of all participants in the system is on an equal footing, guarantees security of transactions and speed. Thus, Exscudo takes a step towards the "Capital Market 2.0", where the crypto-currency markets and traditional finance penetrate into each other, as well as all segments of users, regardless of the volume of their capital.

Exscudo's activities are absolutely legal and transparent, which opens the market of crypto-currency finance for institutional investors and companies operating in traditional markets. Exscudo is an all-in-one solution, making it easy to start operations with cryptocurrencies for personal or corporate investments, as well as to transfer money within the system.

#### For the Everyday Users:

Every user that installed the mobile application Exscudo Channels gets access to the financial market regardless of the amount of initial investment. With the help of Exscudo, ordinary users can use financial instruments, which in traditional markets are available only to professionals and institutional investors.

#### For the Cryptoeconomy:

Exscudo solves the issue of cryptocurrency/fiat exchange: you can exchange your assets with minimal spread and lowest commissions. We also widen cryptocurrency payments possibilities - pay for goods and services using mobile devices with NFC, use Exscudo bank cards issued by our partners to make direct payments with your cryptocurrency.



# WHAT MAKES EXSCUDO SPECIAL? CONCLUSION

#### For the Traditional Financial World:

Institutional and retail investors now have the easiest way to buy and trade cryptocurrencies on the exchange. Our terminals and trading instruments are created to be similar to those of traditional exchanges. Exscudo merchant allows merchants to accept cryptocurrencies as a means of payment in Internet services and online stores, as well as instantly exchange them in fiat funds and transfer them to a bank account.



#### **REVISION HISTORY**

Version

1.0

Date

02.04.2017

Author

Exscudo Team

Summary of changes

Initial Release



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