

# **Whitepaper**

(Draft under open revision)

**Jasperchain**



**Jaspercoin**

## **Cryptocurrency and Decentralized Platform for Cryptographic Assets and Value Chains**

This document is intended to provide information about the Initial Coin Offering (ICO) for Jaspercoin based on the Jasperchain platform, and does not represent a contractual offer. An offer will be issued through a confidential memorandum.

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## Abstract

The Jasperchain project is an alternative to Bitcoin, designed to be easier to mine and widely used in everyday business.

Profitable mining of Bitcoin is now only possible with access to large quantities of almost free electricity, such as hydro-electric or geo-thermal. Other cryptocurrencies can be mined at lower cost but require considerable technical knowledge and computing power.

The mining process that creates the Jaspercoin currency uses a tiny fraction of the electricity required by Proof of Work platforms, solving a substantial environmental issue. It does not require high-powered computers and it does not require any technical knowledge. Regarding Proof of Stake implementations, Jaspercoin does not advantage those with the largest stake in the network. Such systems tend to centralize mining.

The Jaspberry is an affordable, dedicated mining computer that operates on a plug & play basis, making mining available to practically anyone. The device connects automatically to Wi-Fi and starts mining. When it successfully mines Jaspercoin the coins automatically appear in the nodes digital wallet.

By democratizing the mining process we will put cryptocurrency in the hands of millions more people.

Companies will be able to use spare computer processing capacity to create Jaspercoins. They also will be able to create their own tokens in Jasperchain and brand them to create loyalty programs, then gift those tokens to customers or suppliers.

These low-cost promotional programs will increase the circulation and acceptance of cryptocurrency and position Jaspercoin at the center of the blockchain economy.

The Jaspberry will generate mainstream publicity. The *Mine Your Own Beer* promotion, in which people use laptops or Jaspberries to mine Jaspercoins that can be used at the bar will put Jaspercoin on television, newspapers and all over social media.

A team of twenty five developers is working on the security, scalability and features of the platform and the executive team is partnering with major corporations whose mainstream promotions will make Jaspercoin part of everyday life.

Investors participate by acquiring a license to mine Jaspercoin in the Initial Node Offering (INO) or by investing in the whole platform at an Initial Coin Offering (ICO).

## The state of play

### A quick primer on cryptocurrencies and tokens

A cryptocurrency (e.g. Bitcoin) is a controlled issue of a means of electronic payment. That issue and subsequent transfers are decentralized, i.e. the transactions are verified by all the computers in the network (nodes), not just a centralized authority. All transactions are chained together, time stamped and cryptographically connected in order to prevent fraud. Transactions are permanently registered and publicly visible on the blockchain, an online ledger/database.

People can track their balances using digital wallets, stored on a computer or phone. They can also exchange different types of cryptocurrencies and conventional money using online exchanges.

In the same way the blockchain is used to create coins and verify and record transactions, it can be used to create tokens that represent cryptographic assets, then verify and record all of those transactions.

These tokens can represent physical assets (property, equipment, commodities) intangible assets (copyright, licences, software) and securities (bonds, loans and loyalty programs).

Loyalty programs are essentially private currencies where different market participants can exchange value.

## Issues around Bitcoin and cryptocurrencies

### Centralization of mining

Blockchains have demonstrated their ability to decentralized the following: production of a currency, validation of transactions, fund-raising, security, data storage and many aspects of governance.

Mining was designed to be decentralized in order to prevent one party gaining 51% of the processing power and therefore manipulating the blockchain for their own gain. The more processing power you have, the better your chances of mining Bitcoin, so as the price of Bitcoin has increased (from zero to USD\$20000 in less than ten years) the processing power required and hence the electricity, have exponentially increased. It's estimated the Bitcoin network currently consumes as much electricity as a small European nation.

The consequence is that China, with plentiful cheap electricity now controls 71% of the Bitcoin processing power. Three companies already control over 51%.

This is environmentally damaging, a security threat and it encourages the hoarding of Bitcoin, rather than its wide distribution in the economy.

### Slow uptake of cryptocurrencies

In addition to its centralized distribution, Bitcoin and many other coins continue to experience volatility and rapid price growth. These are disincentives to spend. They have made Bitcoin a speculative asset and store of value rather than a transaction network. The role of transaction currency will need to be filled by another coin.

There are other barriers to uptake; scaling challenges, accounting requirements, government regulatory pressures and ease of use among them.

These barriers, in conjunction with the shortage of spendable cryptocurrency in the hands of consumers have left companies in the real-world economy unenthusiastic about cryptocurrency as a transaction medium. And that will remain the case until millions of consumers have it, and want to spend it.

## Market opportunities

We are on the cusp of a mass adoption of cryptocurrencies. The foundations of this economic upheaval are the erosion of confidence in conventional financial institutions, rapid growth in the market capitalization of Bitcoin, the success of the blockchain as a funding mechanism, corporate adoption of blockchain initiatives and importantly, a jump in awareness of alternative cryptocurrencies that vary the Bitcoin feature set.

The first opportunity is to solve the problem of unsustainable power demands in the creation of cryptocurrencies.

The second opportunity is to capture the public imagination by giving them an experience of (affordable) mining and the use of digital currencies. This would be a democratization of cryptocurrency.

The third opportunity is to involve corporates by giving them a low-cost promotional tool that does not currently exist.

And the fourth opportunity is to connect consumers and companies who are both mining cryptocurrency in a way that creates new transactions in the real-world supply chain. When all parties have easy access to producing coins, loyalty schemes and promotional programs can bridge consumers, manufacturers, distributors, wholesalers, retailers and service providers.

More generally expressed, the opportunity is to become the world's first widely used cryptocurrency.

## **What Jasper delivers**

Essentially, Jasper is decentralizing and democratizing mining, and connecting corporates with consumers.

### **Jasper is making mining environmentally responsible**

The 'one CPU, one vote' principal that underpins Bitcoin (and almost all other cryptocurrencies) has led us to a processor-hungry competition consuming as much electricity as a small European country. Jasper replaces the Bitcoin algorithm (known as Proof of Work) with a system that does not require competition, powerful processors or high amounts of electricity.

This democratizes the process of coin mining. Jaspercoin can be mined with low cost computer hardware. There is no advantage to scale in this system, so mining will be far more decentralized, improving security and making a 51% attack on the network improbable in the extreme.

### **Jasper is opening mining to the non-technical**

By introducing the Jaspberry, computer hardware pre-configured for mining, Jasper removes the need for technology smarts. When consumers or investors connect the Jaspberry to their Wi-Fi, the device automatically registers on the Jasperchain and starts mining. Users can track their Jaspercoin balance on the display and will soon have Jaspercoin in their mobile phone wallet.

Similarly, corporates could use idle computer capacity to mine Jaspercoins.

In this way, two major new market segments enter the mining fraternity and have Jaspercoins in their wallets.

### **Jasper will capture the imagination of the population and bring together corporates and consumers**

When corporate partners introduce loyalty schemes to the Jasperchain economy, they can directly connect crypto mining and their product.

With its brewery partner, Jasper will attract mainstream media and generate social media with the *Mine Your Own Beer* promotion, where Jaspberry owners swap Jaspercoin for beer at their local participating bar. Similarly, we will partner with premium wine, chocolate and coffee brands, bringing crypto mining and consumer goods together for the first time.

Effectively, Jasper will give the corporate sector a low-cost loyalty coin. They'll just mine it on their computer network and offer it as incentives to purchase, much like frequent flier loyalty schemes or retail rewards programs. But much cheaper to run. People will have something to spend their coins on, and companies will have a new source of revenue.

## **Jasper is designed as a high volume transaction network**

Likely to run forty to fifty times faster than Bitcoin, the Jasper network will be cheap to use and scalable. We are applying ourselves to delivering a good user experience.

## **Jasperchain and Jaspercoin**

### **The platform**

Jasperchain is a network of peer-to-peer nodes that facilitates the decentralized production and exchange of cryptocurrencies.

It consists of forked versions of the Bitcoin, Multichain and some Bitpay developments with modifications allowing for our Proof of Grant protocol (see below). Other forks have also been used and will be noted when released in our GitHub repository.

Bitcoin remains the most tested, proven and secure network yet developed. Our encryption algorithms and the chaining protocol are identical to Bitcoin's. The base code for the permission layer is forked from Multichain and allows us to easily add mining nodes and give permission to issue custom tokens. Other permissions will be removed from the code, as well as revoke commands. Our own code adds a secure, adaptive round-robin protocol with halt and round reordering options.

The Proof of Grant protocol has been used to configure mining as a democratic process with low power consumption. Blockchain explorer software has been developed, as have software clients and wallet services. Virtual wallets can be added freely, with a simple command in a single step.

Several of these changes are implemented and are being tested on the Testnet network. The current software version is Alpha 15 (the final stage preceding release) and is operating successfully on the test chain.

Jaspercoin is based on the Jasperchain open-source platform. It's built in a modular fashion based on existing software, all of which is subject to Open Source licenses. Our developers have adapted this software to the needs of the Jaspercoin project.

### **The protocol (Proof of Grant)**

Almost all cryptocurrencies use Proof of Work protocol entirely or in part. The best known alternative to Proof of Work is Proof of Stake, which has well known shortcomings so far preventing its widespread adoption. Proof of Grant is an alternative to existing protocols. It requires the lowest possible electricity consumption that is practical.

Unlike legacy blockchains, Jasperchain only allows mining by permissioned nodes. Authorization to start mining is granted to people or organizations who apply to mine Jaspercoin mining nodes and are able to verify their identity. If the node has permission to mine, it starts that task immediately and does not require maintenance. The only requirement is sufficient disk space on the host computer. Once granted, permission is irrevocable.

Other platforms live with the risk of bad actors gaining control or influence over their blockchain but our practices will prevent anonymous people mining Jaspercoins or gaining control of the network.

Criteria for authorization will be publicly available and an independent appeal process is being developed for rejected applicants.

Mining happens in sequence (a round-robin system), so we remove the need for unnecessary processor-intensive competition. No network node is superior to another - it's a democratic and decentralized system.

The algorithm checks that the correct number of shifts has elapsed (the number of miners -1) before allowing a particular node to take its turn mining.

### Coin issue and transactions

Coins are issued automatically by the platform, and then encrypted in the blockchain.

The node that incorporated the new block receives a reward in digital currency which is stored in that node's wallet. A commission is also automatically paid to a node when it validates a block mined by another node.

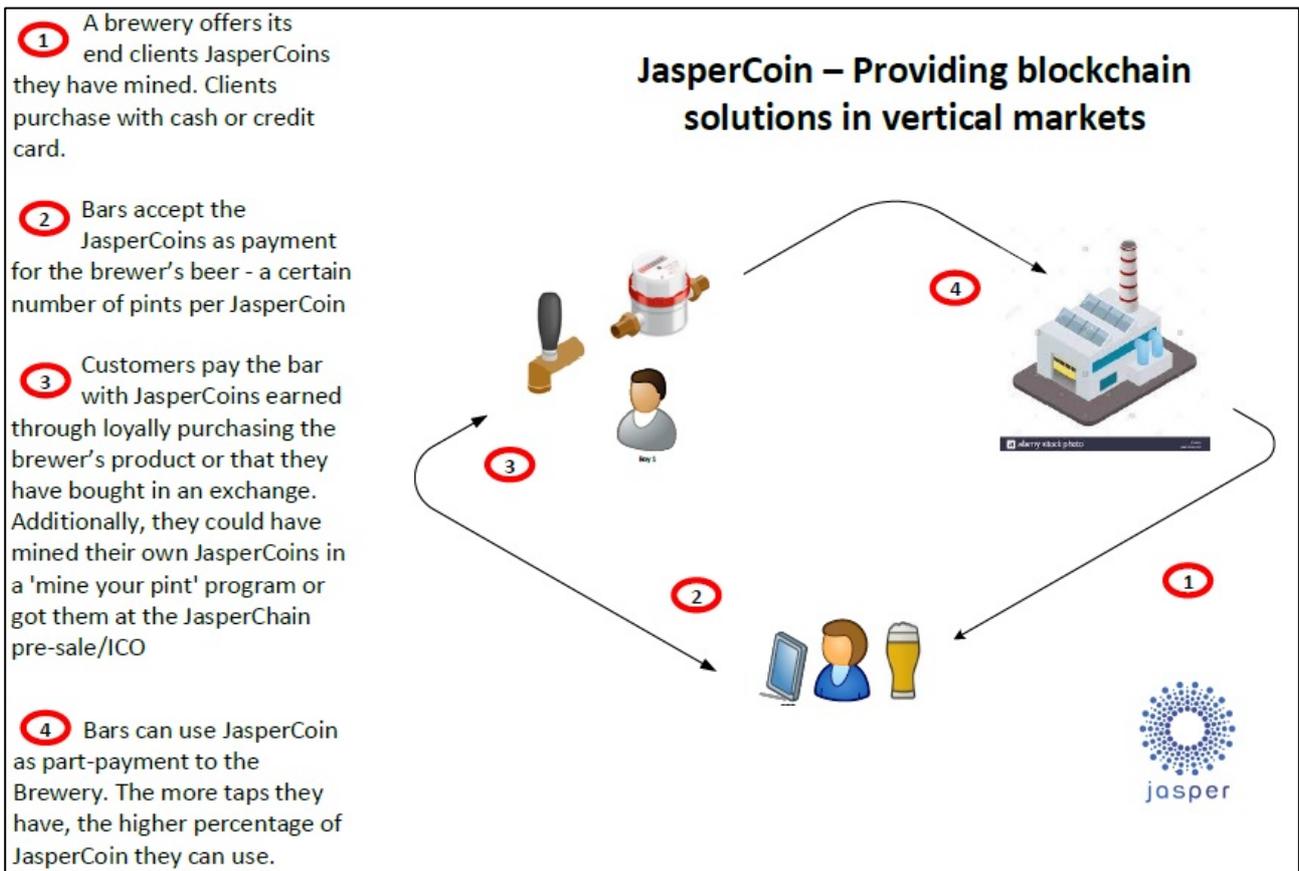
The following image shows the block explorer in the Jaspercoin test chain. This tool allows the verification of each transaction; issue and exchange as well as validation by participating nodes.

### Mining difficulty

The mining difficulty is set low and constant. Any normal computer can mine at full node capacity. This low level of difficulty further reduces electricity requirements and allows for hardware innovation like the Jaspberry.

### Example: Jaspercoin in the craft beer industry

#### Diagram



## Tokens

The Jaspercoin network supports the issue of tokens, in addition to the issue of Jaspercoins, the native currency.

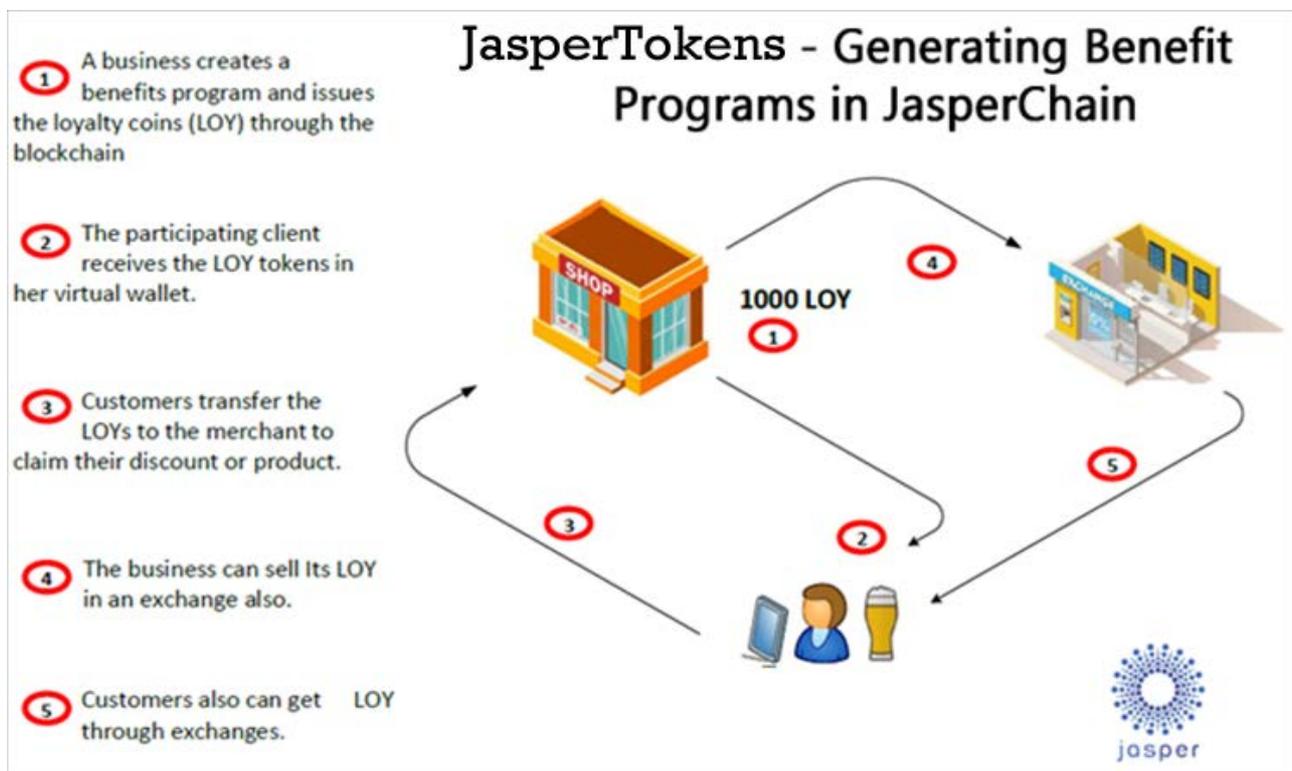
The entities issuing tokens will be governed by an automated mechanism which is currently under development.

These tokens could be used to create any cryptographic asset, for example: loyalty programs, corporate tokens at an exchange rate fixed to a domestic currency or loans to affiliated business, clients or suppliers.

Nodes that have permission to issue tokens (e.g. corporate financial assets, loyalty point programs) can issue these directly with a simple command. The issue is registered in the blockchain automatically. Cryptographic assets can be exchanged between wallets on the network in the same way that currency moves around.

## Diagram

Jaspertokens: Generating Benefit Programs in Jasperchain



## Jasperry as a promotional vehicle

This plug and play device is both a serious mining rig and a promotional tool for Jasper that will attract much attention to the platform.

Any Tom, Dick or Harry can mine Jaspercoins and exchange them for goods. This is only possible because of the network's low processing power requirements.

Our initial example is the *Mine Your Own Beer* promotion, in which people mine Jaspercoins they can exchange for beer at their local bar. You probably already know that beer is the favoured beverage of young adult males.

We will follow this with promotions targeting desirable consumables that appeal to other demographics.

It is easy to foresee a company's social club mining beer or cake using the corporate Wi-Fi, with appropriate permission of course.

People can use their own computer or a Jaspberry to participate in the promotion.

And Jaspberry owners are not constrained to mining beer. They will be able to cash out the Jaspercoin they mine, convert it to other crypto, trade it for other products in the Jaspercoin economy or hold it in Jaspercoin as a store of value.

NOTE: Jasper has already developed a functional prototype of Jaspberry that connects to Jasperchain testnet, synchronize, and starts mining without any administration task. It works in coordination with Jasperpay, a multiwallet supporting Jaspercoin, Bitcoin, Bitcoin Cash, and Jasper Tokens. Jasperpay is already a working prototype supporting JAC, BTC and BCH.

## **Software environment**

Core development has been done in C ++. The block explorer, wallets, and utilities have been developed in Java, JavaScript and Python. Jasperchain nodes run on Linux, Windows and Mac. Wallets run on Linux, Windows, Mac, Android and iOS.

All source code repositories will be available on GitHub from the date of platform launch. All development tickets will be documented on GitHub.

### **Production Network and Test Network**

Proposed updates to the Jasperchain code are put to the developer community and if accepted, are incorporated into the main development branch.

Subsequently, code is deployed on the Testnet and the system is extensively tested. Any collaborator can install the Testnet version in order to verify performance.

Once a new version is accepted, the modified binaries are put to the community and executed according to the protocol. In the event that there is no consensus, the network does not adopt the changes and continues using the previous binaries.

## **Security**

### **Network**

The network consists of interconnected nodes. Each one can be connected to one or more of its peers. The chain of blocks is replicated in each of them, which makes the network practically impossible to tamper with.

### **Currency**

The architecture of the blockchain makes it impossible to issue currency outside the prescribed network. A change in protocols would require a consensus of 51% of nodes which is unlikely in the extreme, given that there is no advantage to using pool mining in Jasperchain.

### **Tokens**

Jasptokens can only be issued by nodes that acquired an issuing license. The tokens will be issued, promoted, and guaranteed by the issuer. Jasper network only provides a platform to distribute and interchange those tokens. Issuing and distribution occurs inside the network. The multi-wallet Jasperpay will support these tokens.

## Governance

Jasperchain development is governed by consensus in an open community. Each developer modifies the code in their own repository, and then proposes the changes. The code is reviewed and if accepted, incorporated in GitHub.

All changes are publicly documented and anyone can verify what is done in each iteration of the system.

## Funding

The project is funded through four means, conducting mostly in parallel.

- Traditional investments, such as angel funding, repaid with cryptocurrency
- A Crowdfunding program for Jasperry device
- An Initial Coin Offering (ICO)
- An Initial Node Offering (INO)

Those supporting the project in its initial stages receive more cryptocurrency pro-rata than those who contribute funds in later stages, rewarding early adoption. Funding is administered by the Jasper Association, whose sole purpose is to apply the funds collected to the development of code, systems, activities and promotion of Jasperchain technology.

Individuals and entities representing all facets of the economy; manufacturers, wholesalers, service providers and retailers, will have the right to establish nodes in the INO, commensurate with their economic capacity. In other words, by allocating processing power and following the protocol they will be able to produce Jaspercoin.

For further detail refer to [www.jasperfoundation.org](http://www.jasperfoundation.org)

## Initial Coin Offering

### Number of coins

The total number to be issued is set at 1,000,000,000 Jaspercoins (JAC), staged as follows:

1. Initial Block: 33% = 330,000,000 JAC

These are distributed as follows:

- a. 10 % = 33,000,000 JAC  
Distributed among the developers of the Jasperchain platform  
This distribution will be escrowed for 1 year to avoid potential sudden effects on the currency price.
- b. 90% = 297,000,000 JAC  
Distributed in the ICO

### Application of funds

Application of funds collected during ICO:

Track	Uso de Fondos	# JAC
Development	25%	74.250.000
Marketing Campaigns	20%	59.400.000
Operations	20%	59.400.000
Gadgets	15%	44.550.000
Legal	10%	29.700.000
Contingency	10%	29.700.000
	<b>100%</b>	<b>297.000.000</b>

2. Block Mining 67% = 670,000,000 JAC (\*)

Successful mining generates a reward of 100 Jaspercoins per block. The precise rate of deceleration in coin issuance will be determined pre-launch.

(\*) NOTE: if the hardcap is not reached during the ICO and there are remaining JAC, these will be added to the mining percentage.

## Roadmap

- Q4 2017 :
  - Clone Bitcoin Platform/Code Bitcoin fork (complete)
  - Clone BitPay code (complete)
  - Initial changes to the Source code, committed in GitLab (complete)
  - Releases alpha 1 - 15 (complete)
  - WhitePaper Draft (complete)
  - Testnet alpha 1-15 (complete)
  - WebSite Hosting (complete)
  - Web Blockchain Explorer alpha (complete)
  - Test protocol execution from alpha 15
  - Recruit angel investors Stage 1 (complete)
- Q1 2018 :
  - Launch Private-Sale (complete)
  - Launch web site (complete)
  - Launch official social media channels (Twitter, LinkedIn, Telegram, Facebook, Medium) (complete)
  - Build Jaspberry prototypes (complete)
  - JasperSight (Jasperchain explorer) Beta online (complete)
- Q2 2018
  - Jaspberry #1 (complete)
  - Build prototype: JasperPay y Jasperchain conection
  - Kickstarter for Jaspberry
  - Private Sales / Investors events
  - Jasper Kick-Off / Press release
  - Deals with Business Users
  - ICO / ICO Marketing – R&D
- Q3 2018 :
  - Launch & run ICO
  - Jaspberry Development
- Q4 2018
  - Jasperchain / JasperPay / JasperSight Developments
  - Jasper Sales – Task Force
  - Launch Testnet beta
- Q1 2019
  - Launch Official Jaspercoin Esperar por Inicio Nodo 1
    - Mine Initial Block with Pre-Mine
    - Distribution of Jaspercoins from initial block.

- Mine 100 blocks from setup stage
- Inicie Nodo 2,3 & 4 and conexión to Nodo 1
- Grant mine permissions.
- Exchange Opening of Jaspercoins (ARS/USD/BTC/ETH against JAC)
- Upload wallet to Play Store y Apple Store
- Inicie operaciones on Mainnet

## Team

Currently more than 25 professionals are at work on the project and collaborating on the Slack channel.

### Leaders

- Gerardo Ratto – Chief Executive Officer
- Brian Sztamfater - Director of Engineering
- Alejandro Sagula – Chief Technology Officer
- Federico del Bagno – Chief Architect
- Tomás Stanislavsky – Digital Marketing Director
- Leandro Galanterni – Full Stack Engineer
- Bret Treasure – Chief Strategy Officer
- Luis Migone – Director of Press & Communication

### Advisors

- Oscar Uncal – Accountant/Financial
- Pablo Stampalia – Technology Strategy
- Alejandro Batista – Legals
- Diego Conde – Project Management

## Updates on development and crowdfunding

[contact@jasperfoundation.org](mailto:contact@jasperfoundation.org)

## **Disclaimer**

### **Risks**

#### **Immutability**

The blockchain is by definition immutable each time the current block is validated on the blockchain. However, if a group of people isolated nodes and formed a more powerful sub-network than the original, and after a time, reconnected to the initial network they could introduce changes for their own benefit. In Jasperchain, we note that this risk is ameliorated, since the addition of new nodes to the network requires explicit permissions agreed between pre-existing network nodes.

#### **Jaspercoin ICO/INO**

The values of JAC and mining nodes are determined by many factors, some of them external, and there is no guarantee that prices will perform at any particular level.