Itasecoin White Paper
A new alternative to current overloaded crypto-currencies
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Bitcoin is a crypto-currency unveiled in 2009 by an unknown developer under the pseudonym Satoshi Nakamoto. It is a true payment system whose organization does not rely on any central entity, such as a central bank in the case of traditional currencies. Bitcoin is the first digital currency that has gathered and attracted a major number of users. Since its founding in 2009, Bitcoin has seen rapid adoption in the commercial and social sectors. Today, Bitcoin not only dominates in terms of market capitalization among existing crypto-currencies, but also dominates minds, due to its title as the world's first crypto-currency.

However, this crypto-currency raises a lot of problems, whether they are economic, environmental or even physical limits. Indeed, every year the Bitcoin network consumes 204.5 TWh of electrical energy, which is the annual consumption of Thailand, emits 114 Mt of CO2, comparable to the carbon footprint of the Czech Republic. In terms of a single transaction on the Bitcoin network, it is 2258 kWh consumed, or the consumption of an average American household for 77 days. Furthermore, the supply of Bitcoins is limited to 21 million units, and this threshold is expected to be reached around 2140. From that moment on, and in fact much earlier, miners will no longer receive rewards for validating block transactions. As a result, miners will have an economic incentive to use their computing power for other, more lucrative blockchains, and as a result, the speed of validation of transactions will slow down drastically, which would take away one of Bitcoin's fundamental advantages and ultimately spell the end of the Bitcoin network. Moreover, Bitcoin is for most of its users a mere speculative bubble: it is not bought as a store of value or used as a currency, it is simply a speculative investment.

Through Itasecoin, the goal is to create a viable alternative to other crypto-currencies, which is both environmentally friendly, while retaining the spirit and taking over the source code of Bitcoin, without new specificities, and to be part of a process of dilution of crypto-currencies, a process of decomposition of the current monopolies, in order to hope for a democratization of this type of currency in our daily lives. My thought is this: the more viable, community-supported and available to all, easily accessible crypto-currencies there are to choose from, the more crypto-currencies will be used in everyone's daily lives. Despite the use of a proof-of-work based crypto algorithm, if what I think is true, the energy consumption of miners would be diluted across all available networks, not just on a few blockchains aggregating more than half of the world's computing power, and wasting energy finding more and more complicated blocks to mine.

A stability and a democratization of this technology is possible, but only the community will know how to implement it through many projects like this one.

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What is Itasecoin?

The original idea started from a joke between 3 classmates (including me), to create a crypto-currency dedicated entirely to the students of our high school major in all of France (about 60000 high school students). In developing Itasecoin, a big streak of ambition took care of transforming the idea in order to create a more general crypto-currency, and less specific to this population. Nevertheless, it could perfectly become and remain the reference crypto-currency of this specialty; it would be very funny and crazy.

Itasecoin is a computer protocol, that is to say a set of rules that allow computers to communicate. To work, this protocol needs to be implemented through a software that runs on different machines, it is for Itasecoin the free software Itasecore, developed and designed after the work of Satoshi Nakamoto and the developers of Litecoin. We will refer to the computer protocol as "Itasecoin", and the crypto-currency as itasecoin, itasecoins or itase.

Itasecoin is a crypto-currency aimed at "deflating" the dominant podium of current crypto-currencies. Unlike traditional currencies (also known as fiat currency), Itasecoin, like most crypto-currencies, is not issued and administered by a banking authority. It is issued on the Itasecoin protocol, which governs the blockchain. This technology allows information to be stored and transmitted transparently and absolutely accessible to everyone, completely secure and without a central controlling body such as a government, international organization or central bank. Itasecoin, like most other crypto-currencies, is put into circulation via mining. Miners, people spread all over the world, from Asia to America to Europe, perform mathematical calculations of a complexity automatically modulated frequently by the Itasecoin network, with their computer equipment (personal computer, mining stations) in order to confirm the transactions made all over the planet and increase their security. In exchange or rather as a reward, they receive itasecoins. They can then be converted into fiat currency or exchanged for other crypto-currencies on exchange platforms.

Blockchain

Situation

The Itasecoin network blockchain is capable of handling a higher volume of transactions than Litecoin or Bitcoin: due to more frequent block generation, the network supports more transactions. As a result, in the case of a merchant using Itasecoin, they will get faster confirmation times, while having the ability to wait for more confirmations when selling larger items.

Mining rewards

Miners are rewarded with 50 itasecoins per mined block. These itasecoins are actually created by the miners, and are permanently written into the mined block by the miners, according to the protocol. This value of 50 itasecoins per mined block is divided by two every 630,000 blocks mined, automatically, by the Itasecoin protocol. Furthermore, the network will not be able to generate more than 63,000,000 itasecoins, which is three times more than the Bitcoin network and three quarters of the Litecoin network.

Block generation

The blocks generated by the Itasecoin network are 60% faster than those generated by the Litecoin network and 90% faster than those generated by the Bitcoin network. As a result, we have drastically lowered the difficulty calculation interval to 2 hours, compared to 3.5 days for the Litecoin network: this allows the network to be "protected" from ASIC miners, which can heavily overload it. The combination of the difficulty calculation speed, the block generation speed and the powerful Scrypt cryptographic algorithm, allows as mentioned above to be protected from power monsters, from huge variations of the difficulty and from a hyperactive network adapting very frequently to the power variations that are provided to it.

Comparison of other blockchains

Here is a table offering a comparison of the main blockchains, taking into account the cryptographic algorithm they use, the speed of calculation of a block, the interval of calculation of the difficulty, their release date, the current reward of a block and their maximum number of corners.

	Itasecoin	Bitcoin	Litecoin	Dogecoin
Cryptography algorithm	Scrypt	SHA-256	Scrypt	Scrypt
Mining speed	1 minute	10 minutes	2.5 minutes	1 minute
Difficulty calculation interval	2 hours	2 weeks	3.5 days	4 hours
Current reward of a block	50 ITASE	6.25 BTC	12.5 LTC	10000 DOGE
Max supply	63.000.000	21.000.000	84.000.000	Infinite
Release date	March 2022	January 2009	April 2013	December 2013

Itasecoin works with one of the most powerful cryptographic algorithms, Scrypt, used by Litecoin, among others. Compared to the other crypto-currencies presented, Itasecoin combines speed of mining for all, while avoiding astronomical difficulty, to the point of "disgusting" moderate miners: Itasecoin stands out for its accessibility. On the other hand, the problem with crypto-currencies without a maximum number of coins issued is that their value is very volatile and is not a real safe investment, which prevents their widespread democratization: Itasecoin remains a deflationary currency, its purchasing power and value increase over time, eventually stabilizing.

Software

What is Itasecore?

Itasecore is the main software implementation of the Itasecoin protocol. Itasecore allows access to the Itasecoin peer-to-peer network, and the ability to receive, send and fully verify transactions and blocks that make up the chain, as well as allowing anyone in the world to operate a node in the Itasecoin network. Itasecore is a descendant of the Litecoin protocol software implementation, itself a direct descendant of the first implementation coded by Satoshi Nakamoto. Itasecore is a software program programmed mainly in C++ and compatible with Linux, Windows and, in the future, macOS operating systems. It can be used in the form of a software with a graphical interface (itasecore-qt), as well as a daemon (itasecored) that runs in the background with which the user can interact thanks to itasecore-cli.

Open-source

It is free software, distributed under the MIT license and available as open source, which is managed mainly on the GitHub repository milopms/itasecoin. The GitHub repository is open to anyone: anyone is also free to add changes to it: as such, it is developed in an open, transparent and decentralized way. However, Itasecore has some hierarchy: the repository is managed by maintainers who are responsible for merging change requests created by contributors.

Wallet encryption

Encrypting your wallet adds an extra layer of security. The encryption feature of your wallet via the Itasecore software allows you to secure your wallet with a password, more accurately a phrase, so that you can view your transactions and account balance safely. You will also be required to enter your password before spending itasecoins. This feature, inherited from Litecoin Core, offers protection against all types of malwares.

Source code

The GitHub repository for the Itasecore software is publicly available (https://github.com/milopms/itasecoin). It descends from the software implementation of the Litecoin protocol. You can compile and build the daemon version (itasecored) or the GUI version (itasecore-qt). Both versions require dependencies, more information on the build documents (https://github.com/milopms/itasecoin/tree/master/doc).

Configuration

As for Litecoin or Bitcoin, you can optionally create a configuration file for the Itasecore software, in the directory of your choice, usually these:

- Windows: C:\Users\<username>\AppData\Roaming\Itasecoin
- Linux: ~/.itasecoin
- macOS: ~/Library/Application Support/ Litecoin

The Itasecore protocol works and communicates with other clients through some ports defined in the software source code, here is the exhaustive list:

Function	Main network	Test network	Regression test network
P2P (Peer to Peer)	25075	19107	13107
RPC (Remote Procedure Call)	29045	12038	29074

The P2P (Peer to Peer) port is used by Itasecore to synchronize the blockchain with the rest of the world's clients and to be informed of new transactions and blocks mined. If your wallet is not fully synchronized, it may not show the current status of the blockchain.

The RPC (Remote Procedure Call) port is used by Itasecore to communicate commands that can drive the software, via an integrated console. A list of commands and detailed help is available and integrated in the software. It is recommended to pay attention to each command that the user sends in the console, and not to let anyone influence this user to write anything if he doesn't know what it is for.

To host more than 8 connections on a client, it is strongly recommended to open the P2P port (25075). It is also strongly recommended not to open the RPC port (29045), for security reasons.

The testnet and regtest networks are reserved for developers or anyone who wants to improve the software: no itasecoin generated in these two networks can be exchanged for itasecoins in the main network. Moreover, itasecoins generated in these networks have no value.

Premining

A total of 1000 blocks were mined before the official release of Itasecoin, corresponding to 50000 itasecoins. We see the criticism coming like a tsunami caused by the earthquake of the equity advocates, here is our answer: we think in view of the current situation, i.e. the explosion of the crypto-currency market and the multiplication of digital currencies, that it was better to mine a certain amount before the unveiling of the project to distribute fairly to all those who will volunteer, and also to the influencers to make the project talk through the spirits, so as not to see the project drown in the middle of the growing world of crypto-currencies. So we think we have made and chosen, in view of the situation and after much consideration, as described above, the right decision regarding pre-mining.

Airdrops

According to our point of view expressed in the previous paragraph, airdrops will be organized, i.e. the fair distribution of itasecoins, during a determined period of time and spaced out in an orderly way in this period of time, in order to spread the project around the world. This distribution, of a minimum amount of 50,000 itasecoins, that is, the entirety of the pre-mined blocks, whose exact dates and conditions are not yet determined, will take place on the social networks of the project, including Discord and Reddit, here are the links:

- Instagram : https://instagram.com/itasecoin
- Twitter : https://twitter.com/itasecoin
- Reddit : https://reddit.com/r/itasecoin
- Discord: https://discord.gg/QWVT6sMUnw
- Website: https://itasecoin.com

Fairness

Regarding the subject of pre-mining, we think we have taken the right step regarding the preliminary distribution of some itasecoins. Moreover, from the day of its release, Itasecore will be released in several versions, each one corresponding to its architecture and its operating system, i.e. Windows and Linux. A macOS version will be released at the same time, but without testing, for the simple reason that we do not own a Mac, we will let the community relay to the developer the potential bugs and problems related to this version. In conclusion, no one has been "secretly" given an Itasecore installer; everyone will be able to benefit from it on the day of release.

Attack risks

One of the biggest problems with alternative crypto-currencies is that the hash speed of the network is very low at launch and in the first few days afterwards, which makes it an easy target for any hacker using the 51% attack. The goal of this attack is to block the validation of crypto-currency users' transactions or, with enough computing power, to reiterate the transaction: as a result, this attack changes the history of the blockchain. With a little hope, a lot of communication, and an instantaneous craze for Itasecoin, we hope for a high enough hashing speed, to deter hackers from destroying the blockchain. We believe this has deterred attackers from targeting the chain. Still, attacks are unlikely to succeed due to the mechanics of locking blocks at each change in difficulty.

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