swisscoin

TECHNICAL WHITE PAPER

Decentralized Hybrid Fiat to Crypto currency exchanges (draft)

« A Society grows great when old men plant trees whose shade they know they shall never sit in.”

Ancient Greek Proverb

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FOREWORD

Why Crypto currency? Why explore a topic as dry as finance? Technology always has trends but why the excitement for this particular technology? The cynical view may answer that it is simply the latest method people have found to play the slot machine, dumb old speculation in a new garb. And certainly the usage statistics of Bitcoin and Ethereum tend to support that vision at the moment. Ethereum is 99% financial transactions and 1% usage right now, Bitcoin is even worst.

So why the hype? What is it that Merkel trees, a rather obscure branch of cryptography, previously only used for stealing music online via P2P downloads suddenly fascinate the planet? Well a lot of it is indeed just speculation. We have seen the scams such as BitConnect and others bring in billions of dollars in a very short amount of time and no one in their right minds would say that these investors are rational. In fact, they know just enough to get themselves into trouble.

But we also know that the current system of trade and exchanges on this entire planet is flawed. Deeply flawed insofar as it belongs to a very small number of people, and these people have engineered rules and regulations mean to obtain an ever growing piece of the global wealth and prosperity pie.

Furthermore they have failed to innovate, preferring to keep their dominance intact via market and legal manipulation rather than innovative progress. This has resulted in the current 6% failure rate on SWIFT wire payments, high fees, slow transfer times, legal hurdles, poor customer service and a 10% fraud rate on Credit cards, the main mode of payment over the internet.

This system is too deeply entrenched to be ever displaced, but it can be transcended. Crypto currency, and specifically decentralized ledgers and distributed applications working together have the power to utterly replace this failing system with a new, rapid, honest and fair system; a system where no one can put their foot on the gas pedal because there isn't one.

This public option, reliant on years of open source development is still only a promise, in order to achieve it we must move away from speculation and firmly into usage. We have to move into using crypto currency to pay for butter and bread and rent and trips abroad.

Our vision is that this should be achieved via the path of least resistance, and we believe to have found a thread towards that path. That is Swisscoin.

Thank you for your time and interest. Please reach out via our website if you wish to contact us.

INTRODUCTION

Swisscoin is an ERC-20 (Ethereum Request for Comment format Token) based on the Ethereum Blockchain. As such it can be sent and received; it can be traded on centralized or decentralized marketplaces and constitutes a crypto currency.

We classify Swisscoin as a currency token because its primary intended use POST - ICO is to serve as a means of payment on the Swisscoin platform.

Swisscoin as all ERC-20 Tokens is made possible by a technology called a Smart contract; a smart contract is a computer program that directly controls the transfer rules of a digital asset in order to insure the respect of a rule set of conditions (usually coded in Boolean logic) that regulate the interchange between the two or more parties involved in the exchange.

This is made possible by the existence of the Virtual Machine capability of the Ethereum Network. Since the beginning of 2016, many in the digital currency world have been eagerly watching the development of the second generation crypto currencies on the platform Ethereum.

Ethereum like Bitcoin also uses the blockchain technology and considers each new block to be a new branch of an infinitely long Merkel Tree (see chapter on Merkel Trees if you do not know what that is). But the main difference is that with Ethereum, each block also represents a state of what is becoming termed as a “world computer”.

Not as state in the sense of an ACPI configuration but in the sense of a Turing complete Machine, a fourth level automata capable of providing combinational logic, finite state machine logic, pushdown automation and Turing completeness. That is to say a mathematical model of computation that defines an abstract machine.

Because this abstract machine runs on a number of distributed processors (in the case of Ethereum mostly on Graphical processing units) it can never be fully controlled by any one person, nation or interest group.

It represents the first global computer and a new epoch in technology. Now of course there are new such system coming online at a rapid pace, and the fact that Ethereum can only accommodate one state per block (and only has a block every 15 seconds or so) makes it very difficult to code apps (called DApps) for this computer.

Imagine having to ask the client to wait 15 seconds in order to see any effect from his pushing a button. End users will not be this patient.

For this reason we feel that Ethereum while a spectacular achievement is but a step on the path to a truly usable world computer. We aim to make Swisscoin compatible with the EOS Main Net when it comes online, the ability to have a state each 15 milliseconds would be a huge step forward in this regard.

For now we intend to create hybrid local apps that are able to use the local machine to update their display and messaging, while in the background they interact with the actual DApp in order to match exchange orders with each other directly on the Ethereum virtual machine.

The current ecosystem is built for desktop and mobile personal computers with a lot of unused computing power. It makes sense to make use of this until the consumer electronics industry catches up to the code and starts providing devices designed for decentralized computing, which is not the case at present.

Swisscoin aims to provide the ultimate in Hybridization and simplicity, reliability, scalability and trust to its users.

THE SWISSCOIN HYBRID WALLET EXCHANGE

The Swisscoin hybrid wallet is born of a realization; the current crypto currency ecosystem is utterly useless to the goal of a decentralized, equalitarian internet allowing frictionless exchanges and greater economic prosperity and freedom for all.

There is no point in having a decentralized ledger or a decentralized computer if you need to move through a centralized and regulated point of exchange every time you're trying to sell some cryptocurrency to buy anything in the real world, where in 2018 at least, FIAT currency is still the norm.

We aim to provide a usable solution that will allow people to add any ERC-20 token of their choice to our wallet application, and trade it (as a pair) on the Ethereum VM via a DApp hosted on the Ethereum virtual Machine.

What this means is no more registering to a million different websites and hoping they do not disappear between the moment your wire them money and receive it on your account or between the moment you buy Bitcoin, Ethereum or any other crypto currency, and get it delivered to your wallet. The Bitcoin community should have learned from the Mt. Gox debacle but it did not and we are still operating under a centralized exchange paradigm.

Of course centralizing the exchange as Coinbase.com or Poloniex.com do is pleasant for the end user; Quick exchanges, immediate view of the market place, lots of analytical tool that are built into the platform and work in real time.

All the things we cannot do in a decentralized environment due to these 15 seconds per state limitations. It's a simple reality that microsecond adjustments to the price are not possible. We believe however that the development of visually helpful tools to get around this problem, by reporting a state each 15 seconds are valuable to the Ethereum ecosystem and the world of crypto currency at large.

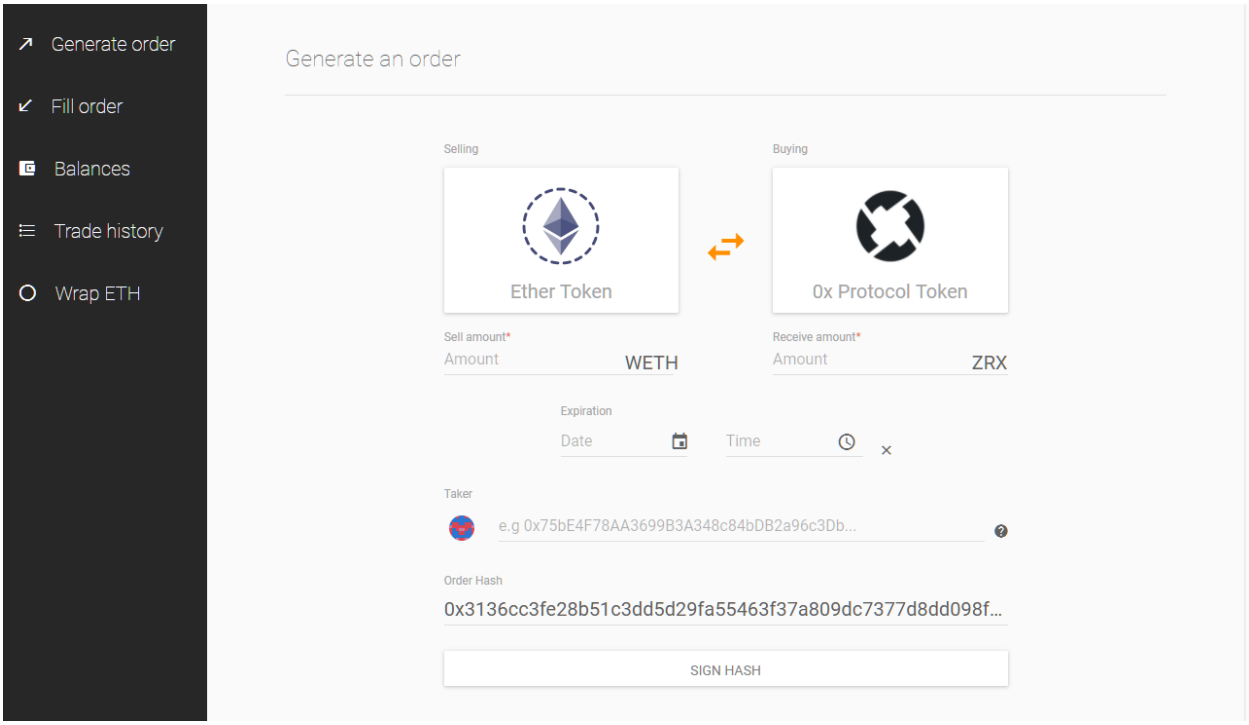
The number one problem of the current decentralized exchanges is in our opinion the lack of simplicity and usability by low technical expertise users.

Let's take a look at the 0x protocol which is currently the leading protocol of decentralized exchanges on Ethereum.

0x Protocol

0x protocol works using web3 a JavaScript library used to communicate with the Ethereum nodes and smart contracts. Under the hood of course the Web3 library uses a JavaScript Object Notation Remote Procedure Call Protocol (JSON-RPC) to talk to the Ethereum nodes and Smart contracts. This is done via GETH communication, GETH is simply the Go implementation of the ETH protocol, which can be interacted with using the console, or code (code mode) or even HTTP or IPC (inter process communication) the Web3 library is available in open source and the web3 JavaScript API can be found online at this address (http://web3js.readthedocs.io/en/1.0/).

We have provided below a view of the User Interface in use by the current DApp:



The way this works is as follows:

Step 1: select the token you wish to trade (it can be added if it's not yet part of the pre-registered tokens, this is the major advantage of permission less decentralized marketplaces).

Step 2: Wrap your Ethereum (the 0x protocol warps ETH into a token in order to make the process easier).

Step 3: select date and time of expiry for your order (otherwise you would have no way of canceling it currently)

Step 4: Sign and broadcast the order on the network via the previously discussed RPC protocol

Step 5: Send your transaction JSON file to your partner via "?" that is left up to you, which is not optimal to say the least, wait for it to get picked up in time and filled.

This is an incredible technical achievement but does not offer users several important pieces of functionality that a centralized exchange does;

- Price information (up to date)
- Market depth
- Matching table
- Analytical tools
- Automated matching

Let's go one by one and review their use and make the case for the need to have these pieces available when making a trade.

Accurate price information:

Crypto currency markets are notoriously volatile, prices can jump by 50% or drop by 50% or more in the span of a few hours, even Bitcoin, which is now worth enough to dampen this violent volatility somewhat is still capable of these moves or even greater ones in the span of a week or two.

This means that people who wish to profitably trade crypto currencies need to be able to ascertain with some degree of confidence that the price they are proposing is going to be something the market can absorb and accept in order for an exchange to take place. In the absence of visual price information, up to date of course, it's almost impossible to make a market.

Market Depth

This is also vital information that is currently not available on decentralized platforms, the DApp exchanges cannot show market depth today and that prevents any analytical trader from using them in the short term, as so many decisions are made on the bench depth of bulls and bears.

Matching tables

Many centralized sites have helpfully made their matching tables visible; this is incredibly useful when looking to place a limit order at market prices in order to trade at a specific, precise price level. Without the matching table or accurate price information, this is not possible.

Analytical tools

A regular trading window at Poloniex or GDax offers a host of analytical tools that are easy to implement if the application has the previously mentioned accurate price information and of course, a centralized server to store it. But in the case of a decentralized marketplace, this is much more difficult. We aim to take advantage of the fact so many users have access to powerful computers (mobile or desktop) in order to create a hybrid App / DApp wallet that uses local processing power and storage in the form of a P2P network to relay this info (just like Bitorrent shows you the progress and availability of your download) combined with a decentralized matching table hosted on the Ethereum blockchain inside our DApp.

Automated Matching

This is really the pièce de résistance of the entire endeavor, without the automated matching we are mostly wasting our time or at least have to admit that this is more of an academic exercise than an attempt to create a new viable marketplace.

Automated matching is something that goes back to the first computer system on the Stock exchange market and there too it changed the game. Today automated matching tables that simple fill order up to the greater amount at equal prices are open source and a dime a dozen, the challenge is to create the abstraction layer allowing us to run this application as a DApp on the ETH VM. We believe we have a way to solve this challenge.

Volume	Bid	Offer	Volume
		$25.70	300
		$25.60	550
		$25.50	85
		$25.40	70
100	$25.30		
250	$25.20		
55	$25.10		
630	$25.00		

FIAT to CRYPTO CURRENCY BRIDGING

Another piece of the financial puzzle we need to solve in order to make crypto currency a viable alternative to fiat currency is the problem of redemption vs. each other. It is not in the interest of the banks and their central banker regulators to make this exchange easy or simple. Many of them understand they now preside over an obsolete, costly and unfair mode of exchange and that the new competitor that is crypto currency and decentralized ledgers will eventually capture 100% (or close, boutique banks will probably still exist as museum show pieces or for entertainment) market share. The endless lists of requirements they impose on customers are but a pale reflection of the maze of legal impediments put in the way of companies trying to offer crypto currency exchange services. Some countries have taken the step to ban it outright while other are content to stand in the way. These rules exist not to protect society from money laundering as is claimed but simply to maintain complete control over the money supply and means of exchange and payment, for the immense profitability this allows one to generate with minimal effort.

It is up to us, crypto currency companies to bridge that gap with innovative solutions that rely on the banking system as little as possible while it is being phased out of existence in favor of decentralized trustless, permissionless ledgers.

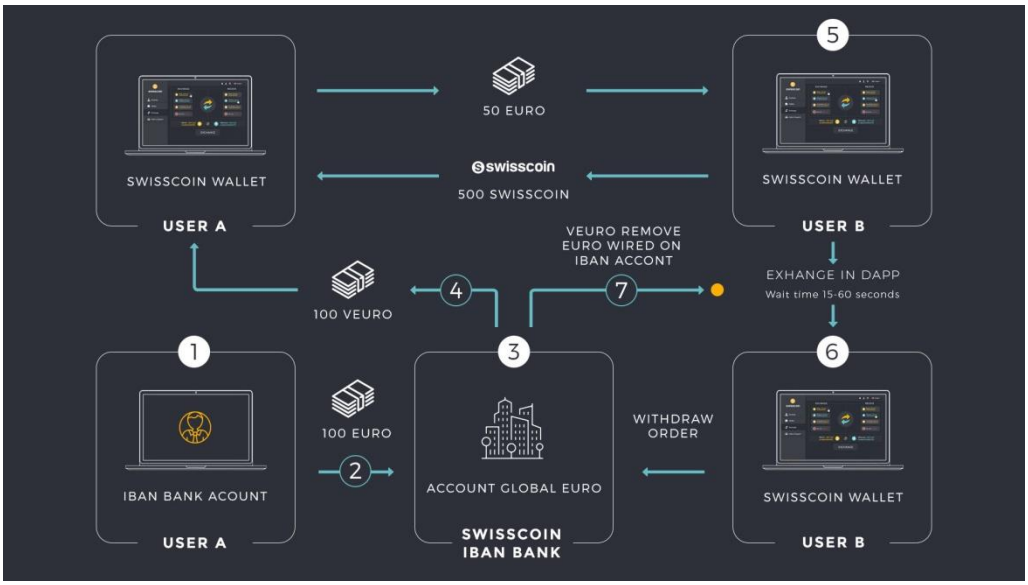
Remains the fact that people will need to spend Euros, Dollars or Swiss Francs to pay for food, rent and other necessities in the near future, any crypto currency wallet that wishes to evolve into a replacement for the bank account must therefore provide the following in our view:

- Ability to transact in the street
- Ability to transact via credit card
- Ability to convert any currency (crypto or fiat) into local usable currency on the spot
- Reasonable or no fees (frictionless payments) as cash offers
- Ability to go back and forth between various formats on the same platform (ERC-20 Token, soon to be ERC-721 tokens, soon to be EOS tokens and Base crypto currencies such as ETH and BTC or BCH) – better than cash

We endeavor to offer these solutions to the public for free in order to maximize adoption, our solution to achieve this is simple yet elegant; we virtualize FIAT currencies as soon as we get them.

Swisscoin will transform your EURO into vEURO, an internal ERC-20 token used in the background by the Swisscoin wallet to allow it to operate exchanges vs Euro (or any other currency accepted currently USD and CHF).

In order to understand how this works we have created a schematic below:



1. User A sends Euro via Bank wire transfer to Swisscoin global Euro account

2. Swisscoin sends equivalent amount of vEuro to user wallet (shows up as EURO) an ERC-20 Token created and used internally by Swisscoin, but compatible with the rest of the ETH environment in case of a failure of Swisscoin as a company
3. User A can now exchange his vEuro against any crypto currency of his choice (at the moment we accept only ERC-20 tokens and ETH but plan to expand that to other such as EOS tokens and ERC-721 tokens)
4. A market is made in the DApp, the order goes in the automated matching table waiting from input from User B
5. User B wishes to exchange his Swisscoins vs. Euros
6. User B also sends an order at the same price (he can see User A's single order sitting on the market table)
7. User B obtains vEURO in the amount specified
8. User A obtains Swisscoin in the amount specified
9. User B can now ask the Swisscoin App (not the DApp) with a withdraw request
10. Swisscoin wires Euro from the global euro account to user B

As you can see this architecture requires very little input from the bank, we only need to be able to spot the arrival of a payment (with an appended identification code, provided by the Wallet App of course) and confirm its arrival to the App, The App can now wire some vEuro from our funds to the User within a few hours. This remains the slowest step by far and it is not possible to speed it up as the banking system (SWIFT) is a messaging system that has a maximum speed due to back office verification and interbanking policies that are and will remain out of our control.

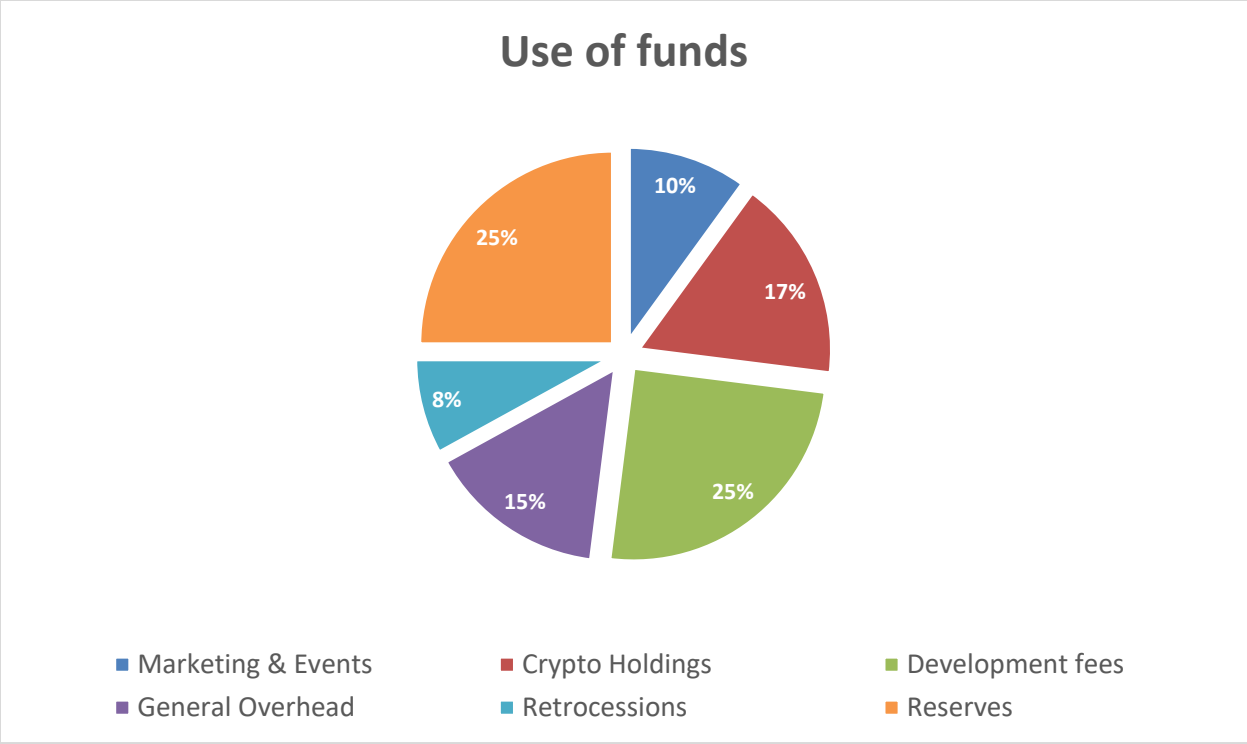
Outflows are even easier, our App simply sends a message to our Fintech application in order to make a payment to the provided IBAN (provided in APP for each payment or saved for all, user's choice).

Swisscoin is a transfer company from the point of view of the banking system, we buy nothing, sell nothing, only operated requested transfers. This is perfectly legal and does not create undue fees. **But the best part is that once the code is open sourced, anyone with 2 banks accounts can replace Swisscoin as a company entirely.**

Capitalization and use of funds

Swisscoin is a limited liability company based in Zug, Switzerland and it aims to transform into a nonprofit foundation as soon as is possible, the choice to be a Llc was due to the need to rapidly acquire legal bank accounts. An important question for us is what to do with the funds provided to us by the sale of our token.

Funds are to be used as follows:



Our tokens are sold as a means of financing our activities. The proceeds from the sale of the tokens are used according to the above breakdown. We remain available to the public to explain how we use the funds.

Swisscoin also looks for regular investors to finance its activities in exchange for shares in the private company named Swisscoin GmbH. How this company will generate revenue is an open question, we believe in developing the technology first and finding a revenue model second.

ICO and Token information

In this section we aim to provide pro format informations about the nature of our token, its issuance, its market supply and the distribution to various stakeholders. It's important for buyers to understand who holds their currency of choice and for what reason. In our case we distribute 10 million SCN to the team over a period of 1 year. In case of a team member leaving before the end of the period, the funds will not be distributed after departure.

We place a hard cap at 30'000'000 CHF which is considerable lower than other technological projects with a considerably smaller scope, this is because we believe that Crypto currency should not go down the road of the dot com bubble. It is not our goal to capture as much financing as possible but rather to provide the world with a free, high quality product in order to build long term value, we believe in crypto and so must

of our reward structure. That's why it is centered on ownership of the token itself. All team members are volunteers, reimbursed only for expenses.

Cap table

SWISSCOIN TOKEN	
Token Name	Swisscoin
Ticker Name	SCN
Technology	ERC-20 Token
Smart Contract	0x3Ff663f89631d3948f85CE1365da09910EAa013f
Type of supply	Fixed
Token features	Currency token
Total Supply	100'000'000 SCN
Hard cap	30'000'000 CHF
ICO date	18 september 2018
Currency accepted	CHF, EURO, USD, BTC, ETH, LTC

Swisscoin is non-minable, it does not need to be because the Ethereum blockchain is minable and executes all transfer operations for all tokens. It would make absolutely no sense to make Swisscoin minable considering its intended use. Likewise it would make no sense for Swisscoin to deploy its own blockchain.

The multiplication of blockchain applications that serve little purpose other than to bring funding to their creators do not serve this nascent ecosystem well and waste electricity.

Token Code

The token code will be made available on Github via

https://github.com/renens

And it can be found here as well, in the future it will be appended with comments.

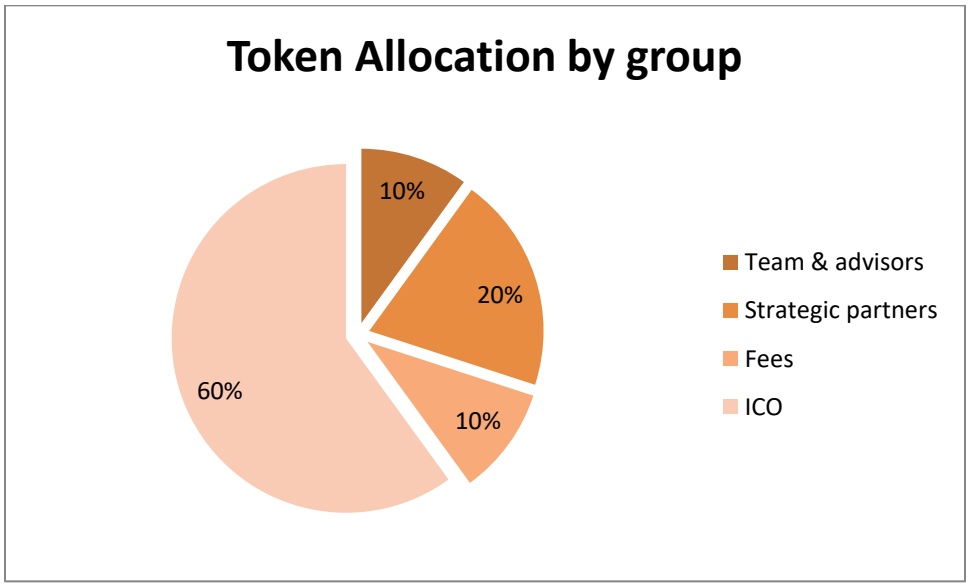
```solidity
pragma solidity ^0.4.16;

interface tokenRecipient { function receiveApproval(address _from, uint256 _value, address _token, bytes _extraData) public; }

contract Swisscoin {
    string public name;
    string public symbol;
    uint8 public decimals = 18;
    uint256 public totalSupply;

    mapping (address => uint256) public balanceOf;
    mapping (address => mapping (address => uint256)) public allowance;

    event Transfer(address indexed from, address indexed to, uint256 value);

    event Burn(address indexed from, uint256 value);

    function Swisscoin(
        uint256 initialSupply,
        string tokenName,
        string tokenSymbol
    ) public {
        totalSupply = initialSupply * 10 ** uint256(decimals);
        balanceOf[msg.sender] = totalSupply;
        name = tokenName;
        symbol = tokenSymbol;
    }

    function _transfer(address _from, address _to, uint _value) internal {
        require(_to != 0x0);
        require(balanceOf[_from] >= _value);
        require(balanceOf[_to] + _value > balanceOf[_to]);
        uint previousBalances = balanceOf[_from] + balanceOf[_to];
        balanceOf[_from] -= _value;
        balanceOf[_to] += _value;
        Transfer(_from, _to, _value);
        assert(balanceOf[_from] + balanceOf[_to] == previousBalances);
    }

    function transfer(address _to, uint256 _value) public {
        _transfer(msg.sender, _to, _value);
    }


    function transferFrom(address _from, address _to, uint256 _value) public returns (bool success)
        require(_value <= allowance[_from][msg.sender]);
        allowance[_from][msg.sender] -= _value;
        _transfer(_from, _to, _value);
        return true;
    }


    function approve(address _spender, uint256 _value) public
        returns (bool success) {
        allowance[msg.sender][_spender] = _value;
        return true;
    }


    function approveAndCall(address _spender, uint256 _value, bytes _extraData)
        public
        returns (bool success) {
        tokenRecipient spender = tokenRecipient(_spender);
        if (approve(_spender, _value)) {
            spender.receiveApproval(msg.sender, _value, this, _extraData);
            return true;
        }
    }


    function burn(uint256 _value) public returns (bool success) {
        require(balanceOf[msg.sender] >= _value);
        balanceOf[msg.sender] -= _value;
        totalSupply -= _value;
        Burn(msg.sender, _value);
        return true;
    }


    function burnFrom(address _from, uint256 _value) public returns (bool success) {
        require(balanceOf[_from] >= _value);
        require(_value <= allowance[_from][msg.sender]);
        balanceOf[_from] -= _value;
        allowance[_from][msg.sender] -= _value;
        totalSupply -= _value;
        Burn(_from, _value);
        return true;
    }
}
```

This code is an Ethereum Standard; it cannot be modified (some parts of it can be omitted however) and is similar to all other ERC-20 Tokens.

The code for the Swisscoin ERC-20 Hybrid Wallet will be made available in open source format as well, the Crypto currency portion of the code will be fully open source, but the applet to communicate with the banking partner of our choice may not be made available in this manner immediately due to contractual restrictions.

Allocation of the token

Swisscoin allocates various amounts to its team members and stakeholers. This is meant as an incentive to promote the activation of their networks and to raise their interest in the crypto currency. Such strategically selected stakeholders (Government, legal and regulatory entities, banks and others) will exponentially increase the value of the token and thus be worth it for the buyers who participate in the public sale.



Usability of the token

We at Swisscoin are very mindful of the fact that ERC-20 tokens cannot be used to purchase everyday things. That is not a good state of affairs as we are in the process of creating this new way of powering exchanges and risk seeing it become no more than a plaything for rich people if we do not allow real usage and exchanges on the platform itself. We have found what we consider to be an elegant yet simple solution to allow people to “spend” their crypto currency.

The Credit Card

Modern fintech applications allow us to provide our users with a credit card linked to a previously generated IBAN account. This is of course optional for our users and will require a full AML and KYC verification but it allows us to operate an exchange operation on the platform and subsequently transfer the vEuro (exchanged to fiat-Euro of course) to the IBAN account linked to the credit card as a FIAT Euro Withdrawal.

Because the credit card terminals are already ubiquitous and the VISA / MASTERCARD backbone is capable of processing about 50'000 operations per seconds, this is a viable payment environment for our platform.

We will be able to issue all registered users a credit card, allowing users to use ERC-20 tokens and exchange only what they need, only when they need it, obtaining Fiat Euros or USD (or CHF) on their credit cards in a matter of hours.

We believe this to be a vital touchstone of the project, without which the usability of the token and the entire ecosystem remains in question. *We do not aim to provide tools for speculators to play with but tools for customers to pay and exchange with.*

Team*

Marc Lebon – Founder & President of the Swisscoin Foundation

Andrea Edelman – CTO & Software developer

Valentin Solovjev – Solidity developer & Smart contract expert

Leonardo Vörstatten – CEO TMT Trading and crypto markets expert

Maitre Jean Tristan Michel – Lawyer, expert in financial matters

Jean François Thevnaz – Former AVS Comptroller and Head of Accounting and HR

Alain Bilat – Sales & Marketing Director and financial expert

Silvain Huguet – Currency trading expert & Advisor

*more team information will be made available in the next version, including pictures.

Timetable

The timetable we provide here is indicative only; the dates may vary as the project advances. We cannot predict in advance how long it will take for our team to develop a solution we feel comfortable testing in real time. The core code has been tested on back and forth transaction and it works, but protecting the platform against attacks and malicious intent and making it compatible, usable and us er friendly might take more time than was originally anticipated.

Date	Event
17.12.2017	Presale Start
01.09.2018	New site
18.09.2018	ICO Start
02.10.2018	ICO End
01.01.2020	Testnet online
01.01.2021	Mainnet online

Laws and regulation

As a currency token, we strive to abide by all international laws and regulations. We are in contact with FINMA, the Swiss regulatory authority for financial assets but are not regulated as of yet. Currency tokens are subjected to base requirements like AML and KYC. **We are not regulated by FINMA at the moment. We hope to be in the future.**

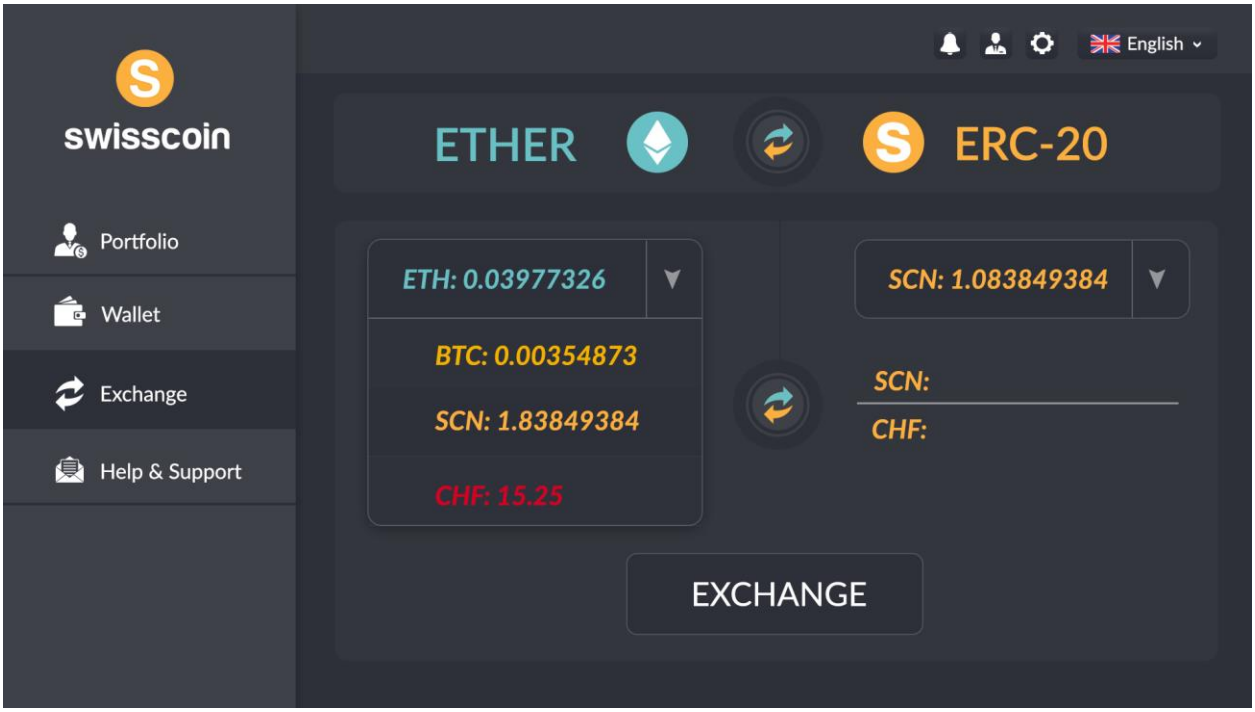
Exchanges

What can we say about the philosophy of building a decentralized internet via centralized exchanges? Is this an antithetical absurdity? We do not think so. **It is a simple practical reality that the first motor vehicles ran on dirt roads, the highways came later.**

It makes sense for us to be on as many exchanges as possible despite the utter lack of logic in selling a token meant to decentralize the internet via an architecture that includes a central point of failure. The simple fact is that offer and demand will dictate the value of Swisscoin and we have an obligation to our holders to work to make Swisscoin available on as many platforms as possible in order to maximize the value of the coin.

We have contacted several (Kukoin, Yobit, Orderbook, etc) and we have received very positive feedback on our project and strong interest, however it seems that the market is going towards a model of not verifying the token's value prior to publication and ICO but rather to firewall the exchanges via a requirement to pay a certain amount of BTC or ETH. That is regrettable but we understand it is not possible to analyze each project in detail for the staff of these centralized exchanges and are willing to be sold side by side with what are essentially scam coins for the moment.

We are also very eager to launch our own in order to bring solutions to these issues.



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5) Wikipedia JSON: https://en.wikipedia.org/wiki/JSON
6) Geth communication: https://www.youtube.com/watch?v=oOfDzXBXoOg&t=41s
7) Web3 JS communication: https://www.youtube.com/watch?v=E8l4UryS73w
8) Web3.js : https://www.youtube.com/watch?v=Jw6Vl7NYN3o&t=55s
9) What is money : https://www.youtube.com/watch?v=fTTGALaRZoc

Post Scriptum

We are a startup company made up of volunteers. If you find any inaccuracies in this document, please let us know at info@swisscoinlab.ch and we will fix them as soon as possible. Thanks !