



ripaex



*crypto  
asset  
marketplace*

WHITEPAPER

🌐 [www.ripaex.io](http://www.ripaex.io)

✉ [info@ripaex.io](mailto:info@ripaex.io)

# 1. Abstract

**Ripa Exchange è un exchange ibrido-decentralizzato con il focus di abbassare il livello di ingresso per aprire nuove piattaforme di exchange ed al contempo offrire ai traders un ambiente sicuro ed efficiente per eseguire operazioni di trading giornaliere.**

Il Team di Ripa Exchange crede che, indipendentemente dagli sviluppi nel mondo delle criptomonete, è oggigiorno costoso per aprire, gestire, e trovare fiducia nelle proprie operazioni di cambio valuta non solo per le risorse richieste per avviare una piattaforma di scambio affidabile ma soprattutto per sviluppare la piattaforma in sè e trovare la liquidità necessaria per generare profitto nei primi 3-5 anni di attività.

Azione è richiesta ed azione è richiesta adesso. Gli utenti sono frustrati da exchange inaffidabili che chiudono scappando con i fondi, vengono hackerati oppure non sostengono il carico giornaliero di una'industria crescente come questa è. Nonostante l'impegno degli imprenditori di exchange per offrire piattaforme di cambio valuta efficienti, affidabili e semplici da utilizzare i fondi necessari per costruire queste piattaforme sono nella fascia di 250-300 mila euro senza includere il costo del personale per offrire supporto di livello platino agli utenti finali, l'infrastruttura di gestione, e costi giornalieri dell'attività. Tali costi vengono sostenuti per avere una piattaforma discreta alla quale ci si lega ad unica via con una software house per sviluppi futuri.

É obiettivo di questo progetto di sviluppare una piattaforma di cambio valuta Open Source, efficiente, affidabile ed offrire liquidità<sup>1</sup> all'exchange così creato dal **primo** giorno di attività in modo tale che gli imprenditori in questo settore possono focalizzarsi nel pubblicizzare la propria piattaforma, offrire supporto tecnico di libello platino ai propri utenti e soddisfare tutte le eterogenee legislazioni nell'industria delle valute virtuali. Mentre vogliamo che l'esperienza di trading per l'utente finale sia la migliore possibile offrendo un ambiente di trading sicuro ed affidabile.

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<sup>1</sup>Grazie alla tecnologia RLSP (Ripa Liquidity Service Provider)



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## 2. Introduzione

Il livello di accesso all'industria delle valute virtuali è piuttosto elevato da un punto di vista tecnico per l'utente medio, ed ha un livello di accesso economicamente elevato per l'imprenditore che vuole avviare un'attività in questo campo, valore dato dall'acquisto del codice sorgente dell'exchange di criptovalute, dal reclutamento di personale operativo per le operazioni di DevOps, per reclutare operatori di supporto tecnico, per sottostare alle leggi nazionali ed internazionali in materia di AML/KYC, per avere liquidità dal primo giorno di avvio delle operazioni di cambio. Con questo progetto, Ripa Exchange, vuole abbassare questo livello di ingresso perchè **gestire un exchange è DIFFICILE** ed il Team Ripa Exchange vuole che il lettore e futuro imprenditore nel campo delle valute virtuali si concentri/focalizzi su cose veramente importanti non cavilli burocratici che l'industria richiede perchè TU vuoi avviare un'attività in questo campo e tu necessiti del codice sorgente per avviarla (ed il codice sorgente per avviarla ti deve essere concesso gratuitamente).

Per rafforzare/chiarire questo principio economico il punto è che per avviare un exchange è richiesto un investimento esiguo dal tuo venture capital di riferimento e anche con un tale investimento il ritorno dei fondi investiti all'angel investor non sono garantiti nei primi 5 anni di attività.

Per avviare un servizio professionale di cambio valuta crediamo che il codice sorgente dell'exchange e la liquidità da offrire ai tuoi clienti dal primo giorno di attività dovrebbero esserti forniti gratuitamente: non deve essere accettabile pagare €150.000,00 ad una software house solo per avere una piattaforma che funzioni e per la quale dovete erogare altri €100.000,00-150.000,00 per brandizzarla, personalizzarla per i vostri scopi legandovi in questo modo ad una compagnia/software house che potrebbe fallire in futuro e che vi farebbe ritrovare senza poter fare ulteriori modifiche al vostro exchange in quanto non vi hanno mai consegnato il codice sorgente della piattaforma/del prodotto su cui il vostro business fa affidamento/si basa.

**Noi crediamo che tutto questo debba essere gratuito:** dobbiamo offrirti la miglior tecnologia nel mercato attuale in modo tale che tu possa focalizzarti sulla tua attività mentre noi ci focalizziamo in sviluppare la tecnologia per gestire la tua attività/i tuoi affari in maniera efficiente, sicura, responsiva e produttiva. Questo è il motivo per cui Ripa Exchange si prefigge lo scopo di sviluppare una rete di exchange focalizzandosi/utilizzando un'architettura che è *efficiente, sicura, responsiva, compliant e personalizzabile* in modo tale che ogni exchange nella rete può basarsi su di fondamenta solide mentre è comunque possibile modificare la singola istanza secondo le personalizzazioni che la compagnia che gestisce quell'istanza richiede/quel singolo exchange richiede.

Per raggiungere questo scopo abbiamo scelto di sviluppare la tecnologia Ripa Liquidity Service Provider basata su ARK - a blockchain for consumer adoption - il cui obiettivo primario è incrementare l'adozione delle tecnologie blockchain agli utenti finali focalizzandosi su due aree critiche: Una Efficiente e Sicura Tecnologia di Base e Servizi Reali per Gente Comune. L'ecosistema ARK è ancora ad uno stadio iniziale di sviluppo: la futura implementazione di ARK 2.0 permetterà di eseguire smart contract nativi sulla blockchain, che permetteranno alla blockchain ARK di

competere con la sua concorrente Ethereum da un punto di vista tecnologico. RLSP permetterà a tutti gli exchange della rete Ripa di condividere la stessa liquidità-lo stesso libro degli ordini in base ai parametri di condivisione della singola istanza dell'exchange Ripa configurabili nella tua area amministratore.

Il Ripa Founder Team (RFT), come presentato in ripaex.io, opera nel nome del gruppo Ripa. L'RFT è responsabile per l'uso corretto dei finanziamenti ottenuti nella campagna di scambio token RIPA TEC come spiegato di seguito in questo documento.

Il RFT comprende-impone che i risultati delle fasi di Prevendita e RIPA TEC saranno usati esclusivamente per il finanziamento del progetto *Ripa Exchange* come spiegato in questo whitepaper, che saranno resi disponibili per estrazione nella piattaforma apposita restata disponibile più tardi quest'anno tec.ripaex.io, e che dovranno risultare nella creazione di una entità legale che sarà chiamata *Ripa Exchange*. La creazione di tale compagnia è pianificata per il primo quadriennio del 2019.

Fino a tale data RFT opera invece di *Ripa Exchange*, *una compagnia nel processo di essere incorporata*.

## 2.1 Terminologia

**RIPA EXCHANGE:** un exchange FIAT <-> CRYPTO sviluppato partendo dal codice sorgente di Peatio [14]

**RIPA BLOCKCHAIN:** una blockchain DPOS in cui la liquidità ed il libro degli ordini sono condivisi tra tutti gli exchange della rete

**RIPA TOKEN - XPX:** un token crittograficamente sicuro tramite il protocollo DPOS scambiato sulla blockchain Ripa

**RIPA:** l'ecosistema finanziario DPOS composto da Ripa Exchange e Ripa Blockchain

**RIPAEX:** il nome del progetto, sito web del progetto e domini del progetto

**RLSP:** Ripa Liquidity Service Provider, un libro ordini condiviso tra gli exchange nella stessa rete Ripa

**ARK:** una piattaforma per l'adozione consumer di tecnologie blockchain [5]

**ACES:** Ark Contract Execution Services [4] fornisce semplici protocolli e strumenti per costruire robusti mercati di scambio tra blockchain basati sulla tecnologia ARK SmartBridge

**“,” OR “.”:** la notazione italiana per virgola decimale e punti di migliaia è stata scelta per la stesura di questo whitepaper: detto questo “,” rappresenta un punto decimale e “.” rappresenta la separazione tra migliaia e multipli di migliaia

## 2.2 Roadmap

Saranno percorse essenzialmente quattro fasi del progetto RipaEx:

### FINANZIAMENTO DEL PROGETTO: XPX PRESALE E RIPA TEC (WP2)

Questa fase riconosce l'esistenza di un interesse in questo sviluppo di mercato da un capo del Mondo all'altro in riguardo l'abbassamento del livello economico di ingresso per sviluppare exchange di cryptovalute. L'obbiettivo è di eseguire la prima analisi omnicomprensiva dello stato dell'arte per fondare le basi delle fasi successive del progetto e per sviluppare il primo prototipo funzionante di un exchange centralizzato con il codice di Peatio.

**PREVISTA FINE DELLA FASE: GENNAIO 2019.**



### APERTURA DEL PRIMO EXCHANGE E SVILUPPO DI STRUMENTI E RISORSE (WP3)

La seconda fase prende i risultati della prima e sviluppa da qui una serie di strumenti e risorse che offrono guida concisa ed omnicomprensiva per i player senza considerare lo Stato di incorporazione/sviluppo del progetto. Con la prima istanza di Ripa Exchange in esecuzione/aperta al pubblico i primi contatti con altri player economici nell'industria delle valute virtuali possono essere presi.

**PREVISTA FINE DELLA FASE: GIUGNO 2019.**



### ESECUZIONE/DISSEMINAZIONE (WP 7/8) E COORDINAMENTO DEL PROGETTO (WP1)

Durante tutta la durata del progetto, attività di disseminazione (WP 7/8) sono eseguite nelle quali i risultati dei singoli pacchetti di lavoro individuali sono disseminati ai relativi gruppi obiettivo inclusi partners del progetto, supporters RipaEx, manager di exchange, partner bancari come anche tutti gli altri gruppi obiettivo rilevanti al progetto RipaEx/in esecuzione. Questa fase copre una vasta scala di tecniche di disseminazione, da libri stampati ed elettronici, a workshop e sessioni di training/hackatons, reti esistenti, tutti aventi come obiettivo di definire standard per la comunicazione tra exchange tra entità pubbliche e private. Un OVERARCHING pacchetto di lavoro riguardante la gestione del progetto dall'inizio alla fine, assicurando coordinazione adeguata, quality assurance e controllo del budget (WP1).



**SVILUPPO DI UN EXCHANGE IBRIDO-DECENTRALIZZATO (WP 4-6)**

Usando gli strumenti e le risorse sviluppate in WP3, il pacchetto di lavoro 4-6 si focalizza mettere in pratica la conoscenza acquisita e gli strumenti. I tre pacchetti di lavoro riflettono tre punti focali (e gruppi target) nel network di exchange creato per incorporare/stabilire demo di successo su scala locale, nazionale ed internazionale:

l'incorporazione di istanze di Ripa Exchange locali (WP4), analisi tecnica della tecnologia Ripa Liquidity Service Provider (WP5), e primo MVP/POC dell'exchange ibrido decentralizzato (WP6). La fase demo dal cuore dell'azione RipaEx; WP 2 e 3 focalizzano in produrre deliverables (consegne ad esempio strumenti) che abilitano attività di dimostrazione efficienti e di successo. **PREVISTA FINE DELLA FASE:**

**GENNAIO 2021.**

## 2.3 RipaEx Partners - RipaEx Governance

La maggior parte dei parnter sono imprenditori nell'industria delle valute virtuali, tuttavia un Istituto di Ricerca ed Organizzazioni Finanziari sono anche presenti. I partner sono:

**Coordinatore :** Ripa Exchanges Ltd

**CoBeneficiari :**

### 2.3.1 RipaEx Governance

La governance per la rete di exchange creati, lo sviluppo del codice sorgente, il possesso dei token XPX, la Fondazione Ripa.

## 2.4 Sommario del Progetto

1. COSA: RipaEx è un progetto per facilitare la presa di standard per condividere liquidità tra mercati di asset criptosicuri (crypto asset marketplace). L'obiettivo di RipaEx è la promozione di codice sorgente condiviso per portafogli ed exchange nell'industria delle valute virtuali: è obiettivo di questo documento di riferimento di dare informazioni dettagliate per futuri/prospective, sviluppatori di exchange oppure imprenditori in questo campo, per abilitare processi di decision-making corretti e per assicurare il successo dei loro progetti proposti. IT SEEKS di analizzare il potenziale reale di applicazione nel Paese scelto di una rete di exchange e la sua posizione nel mercato.
2. COSA: gli asset crittograficamente sicuri (aka: "crypto assets") sono un'alternativa agli asset emessi dalle borse valori dei vari Paesi che ne possiedono una. Anche se, tuttavia, molte borse valori mondiali danno la possibilità ai loro utenti di verificare e gestire gli asset in loro possesso il processo non è sempre trasparente e semplice da fare e questo è il motivo per cui a partire dal 2009 [9] un nuovo tipo di asset (verificabile dalla comunità) è stato implementato per dare a piccoli, medi e grandi investitori completa trasparenza nella gestione dei loro asset di investimento.
3. QUANTO: recenti sviluppi a livello dell'Unione Europea e globalmente stanno trasformando sia come le valute virtuali sono trattate sia il modo in cui le ICO (Initial Coin Offering) sono legislative. Questi sviluppi combinati hanno messo l'uso e la produzione di valute virtuali in una luce favorevole in costante ascesa.

In Ottobre 2015 la Corte Europea di Giustizia ha sentenziato che bitcoin ed altre valute virtuali

sono esenti dalla tassazione IVA.

In Luglio 2016 la Commissione Europea ha adottato proposal per ammendare la legislazione vigente 4th Anti-Money Laundering Directive (4AMLD) che introduca le figure degli exchange di valute virtuali ed offritori di wallet all'interno del framework europeo di adeguata verifica dell'utente ed antiriciclaggio [6].

In Febbraio 2018 la Commissione Europea lancia l'Osservatorio EU sulle Blockchain (EU Blockchain Observatory and Forum) [2] per osservare gli sviluppi chiave nella tecnologia blockchain, promuovere attori europei e rafforzare l'ingaggio europeo con diversi stakeholders coinvolti in attività correlate alla blockchain.

4. PERCHÈ: c'è ancora poca regolamentazione sulle ICO e solo gli Stati Uniti d'America al momento hanno scritto una legislazione definendo i token delle ICO come securities [11].
5. CHI: i risultati delle indagini di mercato indicano che il medio tech savvy dai 18 ai 45 anni di età è l'utente medio delle valute virtuali tuttavia compagnie in finanza stanno anche cominciando ad inserire schemi di valute virtuali all'interno dei loro portafogli specialmente dalla presentazione del contratto bitcoin futures da parte del Gruppo CME Group Inc. nella borsa valori di Chicago lo scorso 18 Dicembre 2017.
6. QUANTO: la capitalizzazione di mercato totale dell'industria delle valute virtuali è stata stimata attorno ai 317 miliardi di USD<sup>1</sup> ed è prevista la crescita a 5.000 miliardi di USD nel prossimo timeframe di 10 anni [10].
7. WHERE: Local authorities are working with National Governments to make sure local exchangers in the national territory are complying with national and international AML/KYC regulations. Venture capitals and Angel Investors are starting to release financing solutions to start-ups in the Fintech industry all over the world from America to Asia passing through Europe and some Countries are starting state-owned cryptocurrencies schemes to test the exchange of goods & services on those (distributed ledger) technologies [15].
8. HOW MUCH: The average cost for starting your own crypto asset marketplace is around \$ 150,000.00 only for a running instance of your exchange platform: to that you need to add costs to customize the platform before launch and in the future, advertising your new business, running costs for servers, network operators, support center operators and legal department to comply with your State of incorporation AML/KYC legislations and general company laws.

**That is the reason because we think owning the source code of your exchange software is the best way to run a business in this industry.**

9. HOW: The main problems encountered in opening a FIAT <-> CRYPTO marketplace is to find trusted banking partners to comply with the many different AML/KYC rule and procedures to exchange virtual currencies to FIAT currencies.
  10. WHAT: Classical types of exchanges operations are:
    - 10.1. **one-way exchanges:** in which a centralized application has all the liquidity to offer to its potential users
    - 10.2. **two-way exchanges:** in which a centralized or decentralized platform matches the selling requests with the buying requests of its users
- On this a sub-classification is also necessary:
- 10.1. **FIAT <-> CRYPTO exchanges:** in which exchanges operations are performed between FIAT<sup>2</sup> currencies and virtual currencies
  - 10.2. **CRYPTO <-> CRYPTO exchanges:** in which exchanges operations are performed only between virtual currencies
- You can build a matrix based on the four configurations above to build the exchange operation

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<sup>1</sup>Dati Coinmarketcap Aprile 2018

<sup>2</sup>Traditional central banks owned currencies like EUR, USD, GBP, JPY, others...

platform of your needs.

11. WITH WHAT: The specifications to look when choosing for an exchange platform to run are:
  - 11.1. **code:** Open Source, Closed Source or hybrid solution
  - 11.2. **modularization:** separation between exchange engine (orders matching engine), UI and user registry
  - 11.3. **UI responsiveness**
  - 11.4. **compliance** with current industry standards
  - 11.5. **customization** of the exchange engine, trading currencies, UI and other aspects of the crypto asset marketplace platform...
  - 11.6. **security** of the funds: saving in cold wallets and hot wallets configurable
  - 11.7. **transparency** of the funds: proof of solvency of the exchange
  - 11.8. **Multi-Accounts trading:** easy to configure new virtual currency protocols
  - 11.9. **Multi-Accounts users:** possibility to interact with user accounts from Google, Facebook, Twitter to login into the platform and FIDO Alliance security standards for personal credentials.

**Those are not only technical decisions to be made but also economical** especially the owning of the source code of your crypto asset marketplace platform is fundamental to make future customization of your exchange in an independent way compared to rely on a single software house that makes the customizations for you.

12. HOW: Options for finding users for your exchanges operations are: targeted marketing campaigns, innovative features in the industry, fee level based on trading quantities, bonuses for first registration and trading quantities, affiliate marketing for paying users to take their friends to your exchange.
13. HOW: For setting-up a crypto asset marketplace a project must take into account the following legislation:
  - 13.1. **AML/KYC:** *Fourth Anti-Money Laundering Directive* if business set up in the European Union [1] or the AML/KYC reference implementation to your crypto asset marketplace Country of incorporation (as an example *Intelligence Reform & Terrorism Prevention Act of 2004* written by FinCEN in the United States of America).  
International recommendations for undergoing AML/CFT verifications are given by the Financial Action Task Force on Money Laundering [8].
  - 13.2. **Payment Licence:** By far the biggest and most arduous task with regards to legitimising the FIAT <-> CRYPTO exchanges operations is obtaining a *PSD Licence* [3]. The PSD licence follows Council Directive 2007/64/EC and is applied in each country via its own national laws. Costs of an IPPC licence can vary between €XXXX and €XXXX, depending on the size of operation.
14. WHO: The nature of the business under consideration by the Ripa Exchange project (small scale, localised FIAT <-> CRYPTO exchanges operations), means that each enterprise likely to have 7 or 8 staff: N.2 developers, N.1 network/security operator, N.1 administrative, N.2 client support operators, N.1 legal and tax advisor.  
The turnover of such an enterprise however, because of the high value of the end product, is likely to be more than €350,000 a year and could be several times higher. A business of this scale lends itself to the following possible company structures: A simple partnership; A limited company; A non-profit company or social enterprise; A worker co-operative. Financial Agencies are potential key actors, but the type of business they can set up will depend on their legal status which does vary from country to country.
15. HOW: Potential sources of funds for a small-medium sized crypto asset marketplaces are: Bank Loans; Low Interest Loan Schemes; Commercial Credit; Equity financing; Business Angels venture capital. Having a robust Business Plan and financial guarantees are essential

elements for securing funding. The European Investment Fund (EIF) of the EIB, offers support in the form of guarantees for SMEs.

16. WHY: The arguments for crypto asset marketplaces are for financial freedom, decentralizing of the value-transferring operations, and owning for real your money. There are other benefits, well documented, such as faster payments, long term gain based on deflationary economy and prediction of Great Depressions like the one that hit the global economy in 2008. But above all, virtual currencies are the only direct competitor to centralized value-transferring operations done by central banks.
17. WHY: There is consensus in the literature that the use of virtual currencies in place of fiat currencies will result in higher financial freedom especially as they fit into the Austrian school of economy [7] (TODO: add more on Austrian economics school)
18. WHY: Benefits of virtual currencies schemes (TODO: put some numbers)
19. HOW: Securing assets on the blockchains means basically performing three operations
  - 19.1. **Generating a random private key**
  - 19.2. **Converting the private key generated in (1) into a public key:** a common protocol making this conversion in the virtual currencies industry is the ECDSA curve algorithm
  - 19.3. **Converting the public key generated in (2) into a virtual currency address:** common protocols for making this conversion are hash functions SHA-256, Base58 encoding, Base32 encoding
- At this point any value sent to the virtual currency address generated in (3) is secured on the blockchain of choice and accessible only from the owner of the relative private key generated in (1).
20. WHERE: The two critical factors affecting the cryptocurrency industry are banks concurrence and State banning. Although a harmonisation throughout Europe would be beneficial to development of the industry both in terms of taxation and warranty approvals, this is currently not the case. Each country has its specific legislation and tax regime for all exchanges operations involving FIAT money, and State banning is going to completely liberalization of this activities like European Union to complete banning and imprisonment of operators in this industry like Bangladesh [16].
21. WHERE: The Asiatic countries of South Korea, China and Japan are the leader in the field of cryptocurrencies for number of transactions for over 9 years with a proactive approach and favourable tax regime. At the beginning of 2017 in Japan bitcoin has been declared legal tender but China has recently declared illegal token sale and exchanges and local cryptocurrencies marketplaces are closing down.
22. WHERE: Any assessment of your local market should include: number of potential users to reach, type of exchange to incorporate (FIAT <-> CRYPTPO or CRYPTO <-> CRYPTO), type of virtual currencies protocol to integrate (POW, DPOS, Masternodes, others...), types of services to offer (exchange only, advanced trading tools, payment processor, others...), if FIAT <-> CRYPTO exchange number of FIAT payments processors to accept (PayPal, OKPay, MoneyPolo, others...), number of others exchanges in your region.
23. WHO: there are a number of options for dealing with Warranty/Customer protection issues: creating consumer pressure by making clear to the end users that the possession of the private keys of their virtual currency addresses make **liable** for any loss of the private keys meaning nobody can help them recovering their funds if the their private keys are lost. Creating consumer pressure to not leave funds on exchanges ("*Be Your own Bank!!*"), making them choose the licensed exchanges in the market.
24. WHO: While it is very expensive to insure money exchanges operations and money transmitting operations, examples of customer protections in the industry are: Kraken platform which is offering Mt. Gox users partial refund of their lost, NEO community giving refund

to the users involved in the BitGrail hacking, Ethereum supporters giving The DAO investors partial refunds, other hacking cases...

25. RECOMMENDATIONS FOR ALL/LAW COMPLIANCE: if you intend to incorporate a FIAT <-> CRYPTO exchange you should focus from the first instance on law compliance by studying the AML/KYC laws of the country of incorporation and finding bank partners to work with. Local financial Authority can help to comply with rules & regulations and local cryptocurrencies foundations can help you to tune your exchanges operations to perform targeted operations based on the customers interests in the country of incorporation. Promote cryptocurrency-friendly users in the area of interest.



### 3. The Ripa Exchange

Ripa Exchange is an crypto asset (fiat money or cryptocurrency or something) marketplace, following the latest industry standards and resting in the principles of "*open source, secure and efficient*". Ripa Exchange aims to serve a platform for crypto-currency enthusiasts by providing a safe, secure, UI responsive, customizable and easy to use exchange that embraces open source principles and public trust.

Ripa Exchange is implemented with the Rails framework and other cutting-edge technology and will be migrated to an hybrid-decentralized exchange where all exchanges in the Ripa network will share liquidity thanks to the RLSP technology.

#### 3.1 Mission

*“Our mission is to build the world best open source crypto asset marketplace with a high performance trading engine and safety which can be trusted and enjoyed by users. Additionally we want to move the crypto currency exchange technology forward by providing support and add new features. We are helping people to build easy their own exchange around the world.”*

Help is greatly appreciated, feel free to submit pull-requests or open issues.

#### 3.2 Features

A free, transparent and internationalized open source crypto currency exchange.

OPEN SOURCE	COMPLIANT	TRANSPARENT & CONFIGURABLE
<p>All source code are fully released under the terms of the MIT License.</p> <p>Ripa Exchange is a customizable cryptocurrency exchange solution architecture enables easy connection to KYC/AML, authentication, ETL/reporting, and other services.</p>	<p>International KYC/AML standards.</p> <p>Ripa Exchange KYC efficiently submits and exchanges KYC information to meet the banking supervisory standards and comply with Customer Due Diligence (CDD) requirements.</p>	<p>Customize in your own way</p> <p>Major functions have been embedded in the source code – neat registration and log-in interface, personalized deposit and withdraw procedure, best match of bid and ask, etc. These functions are comprehensive and are ready to use with no extra work needed.</p>

<b>INTERNATIONALIZATION</b>	<b>PROOF OF SOLVENCY</b>	<b>MULTI-ACCOUNTS TRADING</b>
All users are able to view Ripa Exchange in a language to their best convenience.  Supporting many common languages, Ripa Exchange makes it easy for users to operate in their mother tongue. You are encouraged to contribute to our language variety. Users will benefit from your efforts.	Easy deployable PoS.  Ripa Exchange Proof of Solvency (PoS) allows users to verify the solvency of the Ripa Exchange based cryptocurrency exchange without compromising user privacy.	Easy currency configuration.  Ripa Exchange allows to create multiple accounts and trading in multiple currencies. Ripa Exchange makes it easy to trade different currencies.
<b>MULTI-ACCOUNTS USERS</b>	<b>ENTERPRISE EXCHANGE</b>	<b>FUNCTIONAL &amp; INTUITIVE</b>
Easy account configuration.  Ripa Exchange allows to create multiple login accounts Google, Facebook, Twitter and FIDO Alliance login standards to secure your account.	Start small, grow big.  Ripa Exchange enterprise exchange features include a high-performance matching engine, scalable distributed worker threads, and SMS 2-factor authentication.	For the new trader, for the experienced trader.  Clean, user friendly registration and login interface. Personalized deposit and withdraw procedure and a built-in proof-of-solvency audit.

### 3.3 Functional Analysis

1. WHY REDIS-RABBITMQ IS NEEDED:
2. WHY NODEJS:
3. WHY PUSHER:
4. ER MYSQL:
5. RUBY FOLDERS HIERARCHY:

### 3.4 Technology Stack

**RUBY ON RAILS :**

**MYSQL :**

**REDIS :**

**RABBITMQ :**

**NODEJS :**

**PUSHER :**

### 3.5 User Interface

Ripa Exchange user interface is based on Peatio user interface a UI responsive user interface built in Ruby on Rails and completely separated from the exchange order engine. Design for a customised UI are in place to offer to Ripa Exchange users the best experience on all devices: here you can find some screenshot of the current exchange interface design.

#### 3.5.1 End-User Interface

Following some screenshot of the end-user Ripa Exchange-Peatio interface: **those screenshots are a work in progress and they may not represents the user interface of the final product**



Figura 3.1: Ripa Exchange trading UI

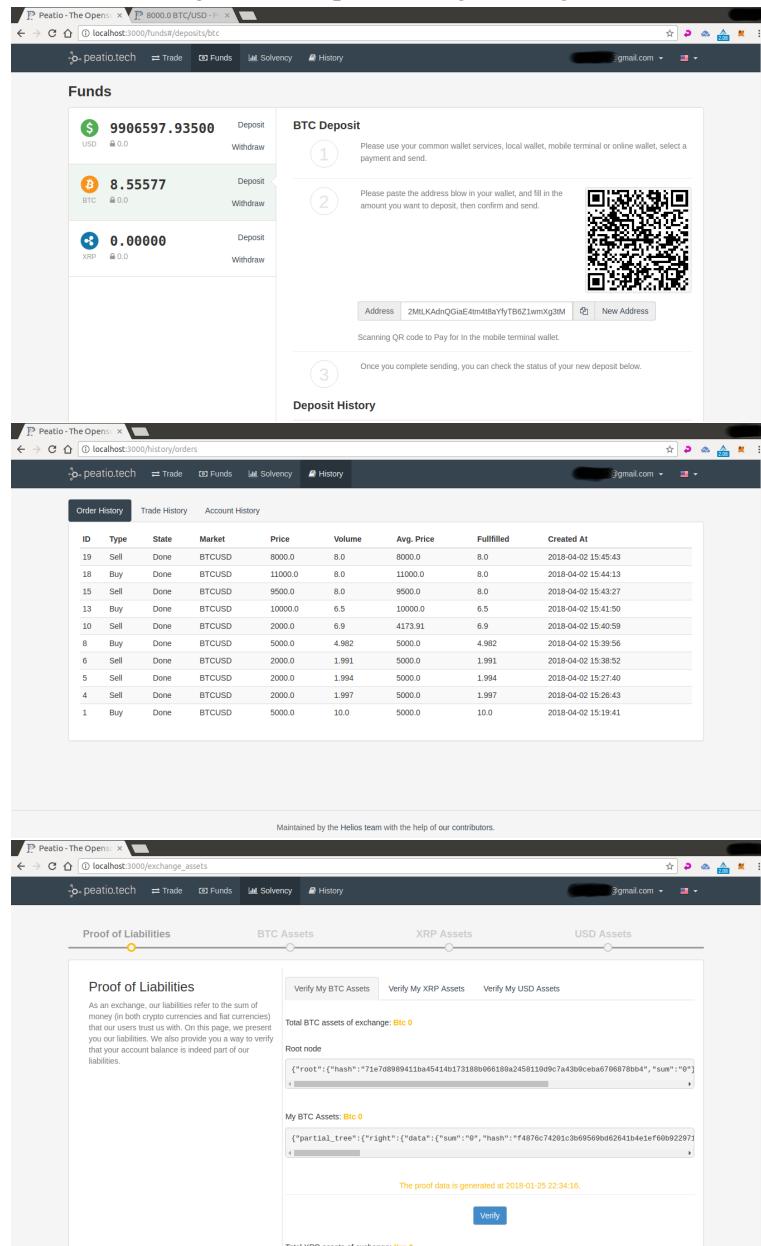


Figura 3.2: Ripa Exchange deposit/withdraw, order history and solvency screen

### 3.5.2 Admin Interface

Following some screenshot of the administrative console of Ripa Exchange-Peatio interface: those screenshots are a work in progress and they may not represents the user interface of the final product

The image contains three screenshots of the Ripa Exchange Admin console, each showing a different section of the dashboard:

- Dashboard:** Shows "Currencies Summary" with data for USD, BTC, and XRP. It also shows an "Exchange Summary" table with one entry: "Register Count" (Count: 13).
- Deposits:** Shows a table of deposits in Satoshi. There are three entries:
 

TxId	Created At	Currency	Member	Amount	Confirmations	State/Actions
Ba8cd462970c96fe7719d39c406348cf5...	2018-04-02 15:24:36	BTC	[REDACTED]	2.0	1	Accepted
696dd7c1b35e37e0b297de20b1214b294...	2018-04-02 15:15:40	BTC	[REDACTED]	5.0	1	Accepted
f2b7ba2667c3975dc414c3e8260f8c4d7...	2018-01-25 22:37:37	BTC	[REDACTED]	2.0	1	Accepted
- Withdrawals:** Shows a table of withdrawals in Satoshi. There are two entries:
 

ID	Created At	Currency	Account	Bank	Amount	State and action
3	2018-04-02 15:13:17	BTC	[REDACTED]	Main # mhrKN3b95R7nPTFT7d...	0.9999	Rejected / View
2	2018-04-02 15:11:56	BTC	[REDACTED]	Main # mhrKN3b95R7nPTFT7d...	1.9999	Rejected / View

Figura 3.3: Ripa Exchange Admin console dashboard, deposit/withdraw screen

The screenshot displays two stacked web pages from the Ripa Exchange Admin interface.

**User Info Screen:**

- Member Info:** Shows Email (redacted@gmail.com) and Register At (2018-01-25 22:31:05).
- Account Info : USD:** Amount 28903.0, Frozen 0.0, Balance 28903.0.
- Account Info : BTC:** Amount 8.36565, Frozen 0.0, Balance 8.36565. Deposit Address 2NA55BdmH8UrnsVoly2UAK5cnc5gb52FWp4.
- Account Info : XRP:** Amount 0.0, Frozen 0.0, Balance 0.0. Deposit Address 1NSgfhckHF13nCX0EJMkzIkU1PxWmC2.

**Verify Account Screen:**

ID	Name	Email	ID Document Type	ID Bill Type	Request At	Verified	Action
1	[redacted]	[redacted]@gmail.com	Unknow	Unknow	2018-04-02 15:04:26	YES	<a href="#">View</a>
13	[redacted]	[redacted]@gmail.com	Id Card	Bank Statement	2018-01-25 22:31:11	YES	<a href="#">View</a>
2	[redacted]	[redacted]@monahan.name	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>
3	[redacted]	[redacted]@weberschulst.biz	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>
4	[redacted]	[redacted]@ilman.net	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>
5	[redacted]	[redacted]@baumbachhudson.net	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>
6	[redacted]	[redacted]@mcglyn.net	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>
7	[redacted]	[redacted]@collins.info	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>
8	[redacted]	[redacted]@pauek.name	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>
9	[redacted]	[redacted]@langworthblick.biz	Id Card	Unknow	2018-01-25 21:31:10	YES	<a href="#">View</a>

Pagination controls: « First, < Prev, 2, Next >, Last ».

Figura 3.4: Ripa Exchange Admin user info and verify account screen

## 3.6 Features at Launch

**CRYPTO <-> CRYPTO :**

**OAuth :** Facebook, Google, Twitter

**FIDO :** login with FIDO Alliance standards

**PROTOCOLS :** POW, DPOS, Masternode, tether, ERC20

**CURRENCIES :** BTC, ETH, DOGE, BCH, TUSD, ARK, LISK, SHIFT, RISE, KAPU, OXY, RIPA, promising ERC20 tokens

**MAIN MARKETS :** BTC, ETH, ARK

**ORDERS TYPE :** market, limit

### 3.6.1 Future Features

**E-WALLETS :** OKPay, NETELLER, MoneyPolo, others...

**ADVANCED TRADING FEATURES :** margin trading, stop loss and take profit,

**FIAT <-> CRYPTO**

**OTHER TOOLS :** VISA/MasterCard, merchants tools, P2P Lending

## 3.7 Towards a Decentralized Exchange...

Ripa Exchange is a centralized exchange which will be converted into an hybrid-decentralized exchange to create a network of exchanges that share the same liquidity between each of them so you can offer liquidity from day 1 of your exchanges operations.

To offer the PROs of a centralized exchange with all the PROs of a decentralized exchange without the CONs of both of them, we need to convert first into an hybrid-decentralized exchange and during phase 3 of our project (WP4-6) we will make all the functional and technical analysis required to make the next step on solid ground.



## 4. The Ripa Blockchain

The project RipaEx will have its own blockchain called Ripa which will be run on the DPOS protocol and has the P token (XPX symbol) running on it that will serve the five following purposes:

1. to list new cryptocurrencies on Ripa Exchanges
2. to advertise new projects
3. to buy RipaEx gadget on Ripa Exchange Store
4. to pay for the sell of goods & services on authorized resellers with our RipaEx POS (Point of Sale)
5. to share liquidity between Ripa Exchanges in the same network

Ripa P or XPX is a cryptocurrency derivate from ARK, Lisk, Crypti and BitShares with unique differences and improvements for reaching the goal of shared liquidity between exchanges in the same Ripa network. This code however inherits the simplified interactions between ARK and other blockchain systems using DPoS as their consensus. This homogeneous codebase allows for the potential to provide service bridges in the form of ARK-Lisk blockchain apps, along with any other additional systems provided by their blockchain administrators.

**RIPA BLOCKCHAIN IS AN ARK FORK AND THE USE OF A BLOCKCHAIN TECHNOLOGY FOR THE NETWORK OF EXCHANGES CREATED WILL COMPLETE THE RIPA ECOSYSTEM BY PERMITTING EACH EXCHANGE IN THE RIPA NETWORK TO SHARE THE SAME LIQUIDITY. WE WILL ALWAYS ENTRUST ARK AS OUR BLOCKCHAIN TECHNOLOGY PROVIDER TO MERGE THEIR CODE INTO OUR LATEST FEATURES FOR WHAT CONCERNING THE RIPA BLOCKCHAIN**

Explained the use of the Ripa Blockchain in the RipaEx ecosystem and explained the RIPA - ARK technological relations what is following are the specifications of the Ripa Blockchain derived/inherited from ARK.

### 4.1 Delegated Proof of Stake Technology

Ripa Blockchain, will inherits the Delegated Proof of Stake (DPoS) consensus system that was first introduced by BitShares. This consensus algorithm was designed to eliminate the issues associated with Proof of Work (PoW), namely the centralization of computing power and the exponentially increasing waste of real world energy. While not completely decentralized as it relies on consensus by a fixed number of elected delegates, it guarantees a better decentralization than Bitcoin. The consensus algorithm implementation is improved over time, evolving into an optimal consensus system.

The technical description of the Ripa blockchain is as follow:

1. DPoS (Delegated Proof of Stake)
  - 101 active forging Delegates
  - Delegates selected by vote mechanism built into DPoS
  - 115,000,000 RIPA - Seeded Genesis Block
2. Multi-signature accounts
3. Constant block reward
  - 2 P per block
  - Inflation Rate (with 8s block times)
    - 6.31% for the first year
    - 5.93% the 2nd year
    - 4.02% the 10th year
  - 8-second block time
    - Decreased block time possible with future upgrades to the core.
  - 25 transactions per block
    - Increased via soft fork as needed.
4. Routing tables
5. SmartBridge data field for custom use and bridging blockchains (ARK Contract Execution Service)
6. Batch transactions<sup>1</sup>
7. Custom transaction fees<sup>1</sup>
8. Native smart contract execution<sup>2</sup>

**AS SAID RIPA BLOCKCHAIN IS AN ARK FORK AND WE WILL ENTRUST ARK AS OUR BLOCKCHAIN TECHNOLOGY PROVIDER TO MERGE THEIR CODE INTO OUR LATEST FEATURES FOR WHAT CONCERNING THE RIPA BLOCKCHAIN,** features like:

**Scaling network** up to the level of major Credit Card networks with core upgrades

- Increasing the number of Forging Delegates
- Increasing the Block Size to include more transactions
- Implementation of pre-approval PBFT block concept testnet [codename: TwinChain]
- Routing tables, to minimize hops among nodes when blocks are broadcast
- Include forging with RIPA Uncles.

**Two node types** is used to secure the RIPA network:

**Relay nodes** - Nodes with full API functionality, acting as a backend for the feature rich lite clients. Relay nodes do not collect any transaction fee and do not have the ability to Forge RIPA Blocks.

**Forging nodes** - Nodes with reduced API functionality, decreasing the exposure to potential DDoS attacks on the RIPA Platform. Forging nodes are able to Forge RIPA and receive transaction fees.

**Official lite client** for network access is be provided shortly before the mainnet launch including desktop clients (Windows, MacOS, and Linux) and mobile clients (Android and iOS).

**OffLine wallet creation** : the network itself does not use a Graphical User Interface by default. Any RIPA account can be created offline and managed at no cost with a single device (computer, mobile phone, embedded ARM, IoT).

---

<sup>1</sup>Future upgrade: when ARK 2.0 will be released

<sup>2</sup>Future upgrade: when ARK Virtual Machine will be released

## 4.2 Hierarchical Deterministic (HD) Wallets (BIP32)

The structure of the public and private key generation follows the same specification as Bitcoin. A custom implementation of BIP32 for Hierarchical Deterministic Wallets is provided to RIPA users.

## 4.3 Fees

The fee for standard transactions is set at ₡ 0.1 but will be flexible in future releases of Ripa Blockchain. At mainnet launch, a fee structure is provided out of the box to forging delegates with the following rules:

- Transaction ₡ 0.1
- Vote ₡ 1 (101 votes per transaction)
- Second Signature ₡ 1
- Multi Signature ₡ 1 per signature + ₡ 1 per signing account
- Registering a delegate ₡ 25.

All fees are paid to the forging node which processes the block containing those fees.

## 4.4 Ripa Delegates and Delegate Voting

Any node running the core blockchain code wishing to become a forging node must register their account within the RIPA network. The fee for this registration is set to 25 ₡ per delegate account registered. RIPA incorporates a new DPoS voting system originally envisioned by the Crypti Founders. The RIPA system fee is 1 ₡ per delegate vote. The voting weight of each wallet will be split evenly between all delegates voted. For example:

- If a wallet votes for one delegate, that delegate receives 100% of the wallets voting weight.
- If that wallet votes for an additional delegate, the entire vote weight is split evenly between the two delegates at 50%.
- By adding a third delegate, the voting weight splits again, and each of the three delegates receives 33.333% of the voting weight from that wallet.

The 101 forging nodes with the highest number of votes are eligible to Forge RIPA blocks. This design eliminates the possibility that any single large RIPA holder or an organization holding large percentages of RIPA are able to gain control over the entire network by voting for all of their nodes into forging positions, thus effectively taking complete control over that DPoS Blockchain. Votes from RIPA Tokens held by RIPA Crew may be used at RIPA Crew's discretion.

## 4.5 Connecting Blockchains

### 4.5.1 ARK Bridged Blockchains (SmartBridge Technology)

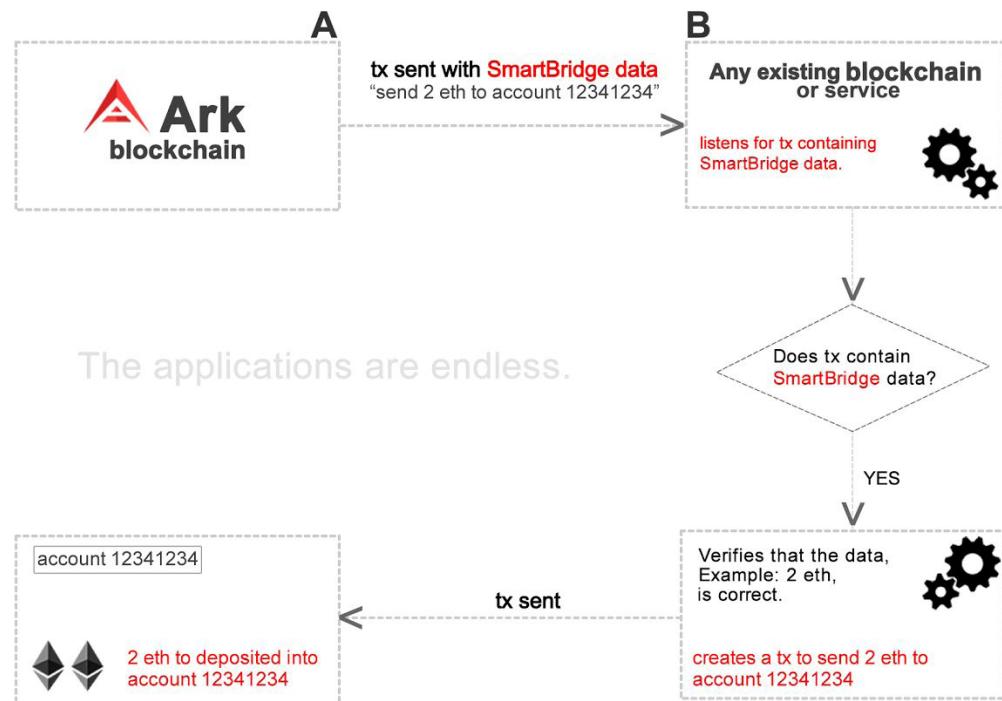
The ARK Platform does not provide direct support for sidechains or dapp databases. Instead, a mechanism to bridge together blockchains is provided via a bridging function built into ARK Core where any blockchain can send and receive trigger function notices and informational data through the primary ARK network via custom developed **SmartBridge(s)** and **Encoded Listeners**.

## What is SmartBridge?

Imagine SmartBridge being a piece of a transaction. This piece of information can be sent in a tx to another blockchain or service. The other blockchain or service can listen directly (via an encoded listener).

Example:

- Server A sends an ARK tx with SmartBridge field filled with "send 2 eth to account 12341234"
- Server B receives this tx, reads the SmartBridge field, verifies the amount sent, and if correct, creates a tx to send 2 eth to account 12341234



This is a very simplistic example, but SmartBridge data can be more complex (send equivalent amount, split it over several accounts, create an ETH smart contract as addressed by SmartBridge), etc...

Figura 4.1: ARK SmartBridge Technology

### 4.5.2 A.C.E.S. - ARK Contract Execution Service

ACES is a blockchain interoperability platform that provides simple protocols and tools for building a robust blockchain service marketplace.

ACES is composed mainly of the following three components:

**Listeners** ACES Listeners provide a way for all the different blockchain transaction events to be easily consumed via a common REST-ful API. The API allows consumers to create subscriptions and receive blockchain events in real-time using Webhook callbacks.

**Services** ACES Services create and execute Service Contracts, which can be anything from uploading a file to a storage blockchain, performing value transfers, creating smart contracts, executing code on blockchain based computing platforms, or interacting with IoT hardware.

**Marketplace Console** The ACES Marketplace Console is a consumer dashboard for searching and executing service contracts listed on the Marketplace. ACES Service providers can list their service nodes using the Marketplace API.

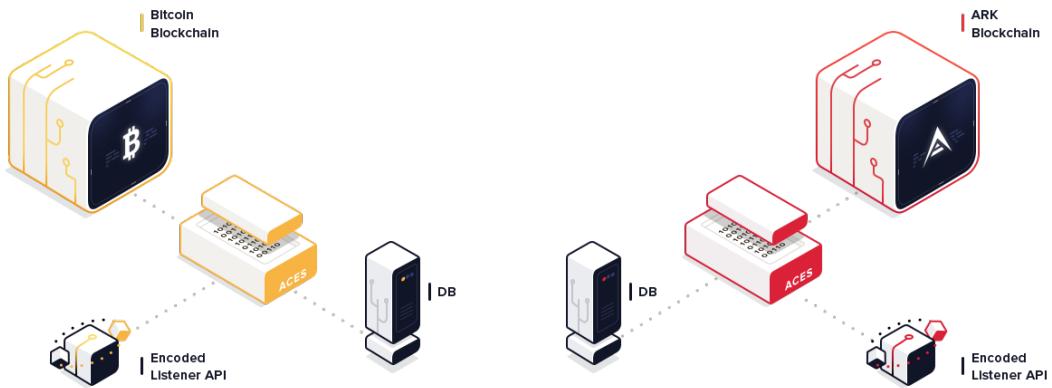


Figura 4.2: ARK-BTC A.C.E.S. SmartBridge Implementation Overview

## 4.6 Ripa Liquidity Service Provider (R.L.S.P)

Using the SmartBridge technology RipaEx will build a mechanism to share liquidity between all the exchanges in the Ripa network by writing the single exchange orderbook in the Ripa Blockchain and by executing order matching between all exchanges in the network.

In this way you can have the benefits of a decentralized orderbook (like liquidity) with the benefits of a centralized exchange (like platinum customer support and FIAT exchange).

## 4.7 Ripa Community Fund

To permits the born of new exchanges in the Ripa network a Ripa Community Fund - RCF - is created with the following characteristics:

**Starting Principal** : the RCF will have a starting operating capital of 5% (5,750,000  $\ddot{\text{P}}$ ) of the genesis block

**Recurring Participation** : each delegate will contribute to the RCF with 5% of its forged XPXs

To obtain funds from the RCF to start your own Ripa Exchange you will submit your proposal in the official RCF section in the Ripa forum at anytime after the first Ripa Exchange instance will be operative.



## 5. Token Sale

### 5.1 Introduction

The RipaEx XPX token sale will be separated into two phases:

**PRESALE** : that will run from April to September 2018

**RIPA TEC** : that will run from October to December 2018

#### 5.1.1 Exchange Rate & Accepted Cryptocurrencies

During the token sale the exchange rate for the XPX tokens will be **₱ /€0.10**.

The following cryptocurrencies are accepted: **BTC, ETH, ARK, LISK**.

If you want to send us a different cryptocurrency send us your choice and we will tell you immediately if we can make the exchange and how to execute the operation in detail (receiving address, exchange rate, quantity)

EXCHANGE RATE IS BITSTAMP LAST AND IS VALID 60 MINUTES FROM QUOTE.

### 5.2 How to Invest

#### 5.2.1 XPX Ripa Token PreSale

Private sale of XPX tokens has **started on Monday 04/02/2018 at 00:00 GMT and will end on Sunday 09/30/2018 at 23:59 GMT**.

You can buy directly here:

[WWW.RIPAEX.IO/PRIVSALE](http://WWW.RIPAEX.IO/PRIVSALE)

or send us your buying enquiries on our social Slack, Telegram, Facebook, Twitter or on other social networks where we are present. For all the duration of the private sale period every exchange operation **will receive a 100% bonus on its sending amount until the first 5.000.000 XPX tokens** have been exchanged and will receive a 50% bonus thereafter.

#### 5.2.2 RIPA TEC

Fundraising through the RIPA TEC platform will follow the schedule:

**from 10/01/2018 00:00 to 10/14/2018 23:59** : with bonus of 50%

**from 10/15/2018 00:00 to 10/28/2018 23:59** : with bonus of 40%

**from 10/29/2018 00:00 to 11/11/2018 23:59** : with bonus of 30%

**from 11/12/2018 00:00 to 11/25/2018 23:59** : with bonus of 20%

**from 11/26/2018 00:00 to 12/09/2018 23:59** : with bonus of 10%

**from 12/10/2018 00:00 to 12/23/2018 23:59** : with bonus of 5%

Coins distribution will be available at the end of each trading day and performed automatically through the RIPA TEC platform. Minimum threshold to reach is 25 BTC.

AS THE XPX EXCHANGE RATE IS CALCULATED AGAINST THE EURO CURRENCY DIRECTLY YOU ARE GUARANTEED TO NOT LOOSE ANY INVESTED FUND DURING THE SALE PERIOD AS THE XPX TOKENS WILL BE LISTED ON OUR EXCHANGES AT THE BEGINNING OF 2019 DIRECTLY WITH THE SAME **₱/€0.10** EXCHANGE RATE AGREED DURING THE TOKEN SALE-ICO PHASE.

## 5.3 XPX Ripa Token Distribution

**115,000,000** XPX tokens are seeded into the genesis block: distribution of the XPX tokens generated are described into figure 5.1 and table 5.1.

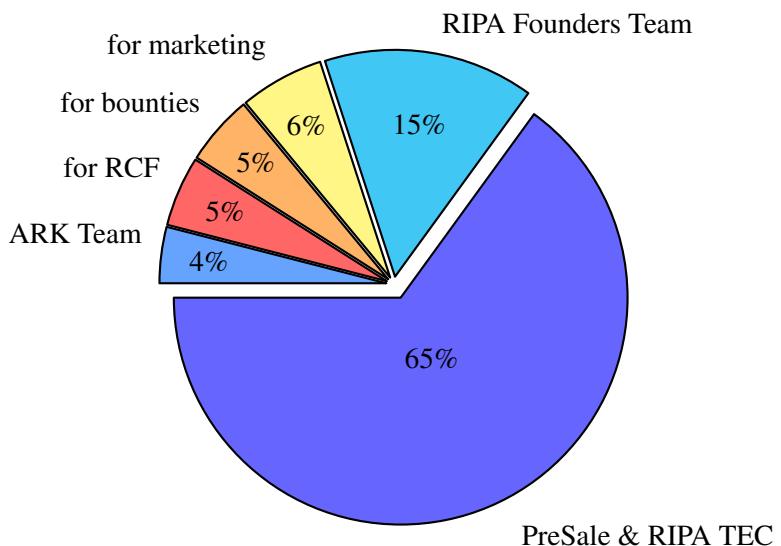


Figura 5.1: Ripa token distribution - Division of funds

Percentage (%)	Quantity (₱)	Purpose
65	74,750,000	to distribute in PreSale and RIPA TEC
15	17,250,000	to the RIPA Founders Team
6	6,900,000	for marketing
5	5,750,000	for bounties
5	5,750,000	for Ripa Community Fund - RCF
4	4,600,000	to the ARK Team

Tabella 5.1: Ripa token distribution

**Tokens not sold during the phases of PreSale and RIPA TEC will be burnt** forever to permits and equal distributions of the funds and avoid speculations on the token remaining.

## 5.4 Division of Funds

The funds collected during the PreSale and RIPA TEC phases will be divided as explained in figure 5.2 and table 5.2 below

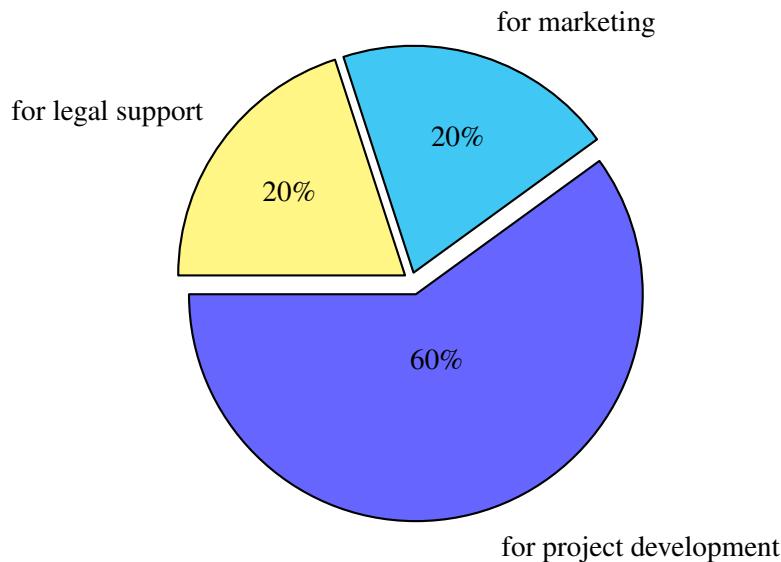


Figura 5.2: Ripa division of funds

Percentage (%)	Purpose
60	for project development
20	for marketing
20	for legal support

Tabella 5.2: Division of funds

where the row project development funds allocation is described in table 5.3 below.

Percentage (%)	Purpose
55	functional analysis, technical analysis, development, testing
15	infrastructure
10	security
20	technical support

Tabella 5.3: Project development focus



## 6. Business Model

### 6.1 Project Milestones

A free, transparent and internationalized open source crypto currency exchange.

	25 BTC	250 BTC	1000 BTC	2000 BTC
DEVELOPMENT	CRYPTO <-> CRYPTO exchange release with 25 cryptocurrencies supported and 3 main trading pairs	CRYPTO <-> FIAT exchange release with MasterCard prepaid card. 50 cryptocurrencies supported and 3 main trading pairs	Advanced trading features. Open of a second and third Ripa Exchanges to join the Ripa network	Open of ten Ripa Exchanges across the Globe
MARKETING	Support from one agency, adv campaigns on targeted channels	Support from three agencies, adv campaigns pushing harder, store with RipaEx gadgets	International presentation event in London	Support from five agencies, targeting all UN countries, presentation event in Tokyo
LEGAL	Legal department working on AML/KYC international standards	Legal departments working on AML/KYC international standards in New York, London, Hong Kong	International Government Agencies cooperation	Banking partnership for defining AML/KYC standards
BLOCKCHAIN	DevNET development for RLSP and future ARK releases	Contributions to ARK development for AVM	Contributions to ARK development for standard timing releases	Partnership with ARK for blockchain technology developments

### 6.2 Market Overview

### 6.3 Local Market Analysis

### 6.4 5 Years Projections

### 6.5 XXP Token Economics



## 7. Team & Conclusion

### 7.1 Team

#### Giovanni Silvestri @ BitNow

Founder and Head of the Project  
10+ Years experience in IT Field,  
4+ Years in Cryptocurrencies Consultancy and Private  
Exchanging,  
2+ Years Experience in finance  
Location: Treviso (TV), Italy  
Bitcointalk LinkedIn

CRYPTO <-> FIAT exchange release with MasterCard  
prepaid card. 50 cryptocurrencies supported and 3 main  
trading pairs

Support from three agencies, adv capaigns pushing harder,  
store with RipaEx gadgets

International presentation event in London

International Government Agencies cooperation

Banking partnership for defining AML/KYC standards

Contributions to ARK development for standard timing  
releases

Partnership with ARK for blockchain technology  
developments

### 7.2 Recommendations

### 7.3 Social



## 8. Legal



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