



ripaex



*crypto  
asset  
marketplace*

WHITEPAPER

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# 1. Abstract

**Ripa Exchange is a hybrid-decentralized exchange with a strong focus on lowering the entry level of opening new exchanges and giving crypto traders safe and secure trading partners to operate on a daily basis.**

The team of Ripa Exchange believes that, despite the recent developments in the world of cryptocurrencies, it is still expensive to open, manage and build trust on a newly created exchange not only for the resources need to run a reliable exchange platform but also for the build of the platform itself and to find the liquidity necessary to run a profitable business in the first 3-5 year gap.

Action is needed and action is needed now. Users are frustrated with unreliable exchanges that run away with their funds, got hacked or does not sustain the load of a growing industry like this is. Despite the effort of exchanges managers to offer efficient, reliable, and easy to use platforms to trade entry prices for building such platforms is in the rage of five-six hundred thousand dollars and that does not include personnel cost to give platinum customer support, platform infrastructure and daily expenses for the business. All of that for then having an decent exchange platform for which you will need to pay an external software company to make changes as you request.

It is the aim of this project to give you an Open Source, efficient, reliable exchange platform and to give the needed liquidity<sup>1</sup> to your newly created exchange from day **one** so you can focus on finding your customers, give platinum support and comply with all the eterogeneous laws in the industry. As we want that the customer experience will be the best (the sleekest) as possible while making them safer to trade.

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<sup>1</sup>Thank you to the RLSP (Ripa Liquidity Service Provider) technology



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## 2. Introduction

- The industry of virtual currencies has (a high entry level from a technical point of view for the average user and) an high entry level from an economical point of view for the average entrepreneur for buying a reliable cryptocurrency exchange source code, to hire professional DevOps personnel, to hire customer support operatives, to comply with national and international AML/KYC regulations to have liquidity from day one of the exchanges operations. We want to lower this entry level because **running an exchange is HARD** and we want you to focus on things that matters not of caveats that the industry require because you want to start to make business in this industry and you need the source code to do it.

To strengthen that there is the point that starting an exchange require an high level of investments form your venture capital and also with that the profit of your exchanges operations are not guaranteed in the first 5 years timespan.

For building a professional exchange services we think that the source code of your exchange and the liquidity to offer to your clients from day one should be given to you free of charge: no more paying \$150,000.00 to a company just to have a platform that works and for which you need to pay another \$100,000.00 - 150,000.00 just to brand it and customize as for your needs so you can tie your business to a company that may go bankrupt in the future and found you in trouble as you never had the source code of the product your business rely on.

We believe that **all of this should be free** and we should offer you the best technology in the market so you can focus on your business while we focus on building the technology to run your business in an efficient, secure, responsive and productive way. That is why Ripa Exchange is focusing on building a network of exchanges focusing on an exchange architecture that is *efficient, secure, UI responsive, compliant and customizable* so each exchange in the network can rely on solid foundations while customising its single exchange instance for the needs the business entity of that particular exchange needs.

For reaching that goal we choose to build our Ripa Liquidity Service Provider technology on top of ARK - a blockchain for consumer adoption - which primary focus is increasing consumer adoption for blockchain technologies focusing on two critical areas: A Fast Secure Core Technology and Practical Services for Real People. ARK ecosystem is still at its early stage of development: in current implementation there is the possibility to run smart contracts natively on the ARK 2.0 blockchain, this will permits this blockchain technology to compete with Ethereum from a technological point of view.

The Ripa Founder Team (RFT), as presented on ripaex.io, acts in the name of the Ripa Crew. The RFT is responsible for the proper use of funds collected under the Token Exchange Campaign (RIPA - TEC) presented below in this document.

The RFT undertakes that the result of this TEC will be used exclusively for the financing of

the *Ripa Exchange* project as explained in this whitepaper - which will be made available on the collection platform: tec.ripaex.io - and which should result in the creation of a legal entity whose name will be *Ripa Exchange*. The creation of this company is scheduled for the first quarter of 2019.

To this end, RFT intervenes on behalf of *Ripa Exchange*, a company in the process of being incorporated.

## 2.1 Key Terminology

**Ripa Exchange** : a FIAT <-> CRYPTO exchange (a cryptocurrency exchange) based on the source code of Peatio [3]

**Ripa Blockchain** : a DPOS blockchain in which liquidity is exchanged for all the exchanges in the Ripa network

**Ripa Token (XPX)** : a cryptographically secure token exchanged on the Ripa blockchain based on the DPOS protocol

**RIPA** : the DPOS financial ecosystem composed of Ripa Exchange and Ripa Blockchain

**RIPAEX** : the name of the project, project website and hosted domain

**RLSP** : Ripa Liquidity Service Provider, a shared orderbook to exchange orders between exchanges in the same Ripa network

**ARK** : a platform for consumer adoption of blockchain technologies [2]

**ACES** : Ark Contract Execution Services [1] provides simple protocols and tools for building a robust blockchain service marketplace based on the ARK SmartBridge technology

**“,” or “.”** : The Anglo-Saxon use of decimal points and commas to represent numbers has been chosen for the purposes of this document: that is to say that a “.” represents a decimal point, and a “,” distinguishes between multiples of thousands, millions and billions.

## 2.2 Roadmap

There are essentially four phases to the RipaEx project:

**Funding the project: XPX presale and RIPA TEC (WP2)** This phase recognises the existence of interest in this market development from across the World concerning the lowering of the entry level for building a cryptocurrency exchange. It aims to make the first comprehensive analysis of this state of the art to form the basis of the later project phases and build the first working prototype of a centralized exchange based on Peatio.

**First exchange opening and development of tools and resources (WP3)** The second phase takes the results of the first and develops from them a set of tools and resources which provide concise and comprehensible guidance to market actors in any Country. With the first instance of Ripa Exchange running first contacts with other economical players in the industry can be done.

**Development of hybrid-decentralized exchange (WP 4-6)** Using the tools and resources developed in WP3, Work packages 4-6 focus on bringing collected knowledge and tools into practice. The three work packages reflect three major focal points (and target groups) within the network of exchange created for establishing successful demonstrations on local scale: incorporations of local Ripa Exchanges (WP4), technical analysis for the Ripa Liquidity Service Provider (WP5), and first MVP of the hybrid decentralized exchange (WP6). The demonstration phase forms the heart of the RipaEx action; WP 2 and 3 are focused on providing deliverables (e.g. tools) that enable successful and efficient demonstration activities.

**Dissemination (WP 7/8) and Project Coordination (WP1)** During the full duration of the project, dissemination activities (WP 7/8) are carried out in which results from the individual work

packages are disseminated to relevant target groups including project partners, RipaEx supporters, exchanges managers, banking partners as well as relevant target groups. This phase covers a wide range of dissemination techniques, from printed and electronic handbooks to workshops and training sessions, ongoing networks, all having the ultimate goal of defining a standard for exchanges communication among public and private entities. An overarching work package is concerned with the management of the project from start to finish, ensuring proper coordination, quality assurance and budgetary control (WP1).

## 2.3 RipaEx Partners - RipaEx Governance

Most of the partners are entrepreneurs in the virtual currency industry, but a research institute and Financial Organizations are also represented. The Partners are:

**Coordinator :** Ripa Exchanges Ltd

**CoBeneficiaries :**

## 2.4 Summary

1. RipaEx is a project to facilitate the uptake of standards to share liquidity between crypto assets marketplaces. The objective of RipaEx is the promotion of shared source code for wallets and exchanges in the virtual currency industry: It is the aim of this reference document to give in-depth information to prospective exchange developers, or exchange managers, to enable correct decision-making and to ensure success for their proposed projects. It seeks to analyse the real potential in the Country of application for a network of cryptocurrency exchanges, and its place in the market.
2. Crypto assets are an alternative to centralized assets managed by (country-specific) stock exchanges. Although certain stock exchanges gives the possibility to their users to verify and manage the assets they own the verification process is not always transparent that is the reason because from 2009 [**bitcoin**] onwards a new types of (community-verifiable) assets have been implemented to give small, medium and big investors complete transparency in the managing of their investments assets.
3. Recent developments at European Union level are transforming both the disposal method of Used Cooking Oil (UCO) and the way in which the EU fuels its road transport vehicles. These combined developments have made the use and production of biodiesel from UCO an increasingly favourable prospect. In May 2003, the European Parliament and the Council adopted the Biofuels Directive requires that Member States in 2005 to replace 2% of their diesel and petrol with biofuels, and replacing 5.75 % by 2010. The EU Animal by-product Regulation 1774/2002 sets restrictions on the use of Used Cooking Oil originating in restaurants, catering facilities and kitchens. The waste management exigency and sustainable transport strategy can both be addressed by the production of biodiesel.
4. There is still very little data available on UCO. Combining total collected with total dumped in the 10 BioDieNet countries gives a figure of 1.92 billion litres this would equate to 1.4 % of their total diesel consumption. Therefore, the potential for UCOME substituting 1 or 3 % of EU diesel consumption is quite possible.
5. The results indicate that restaurants represent the primary UCO source for most of the BioDieNet countries, although the domestic sector and food processing industry are also of importance. Most of the Western European BioDieNet countries have well established collection systems for UCO, but this is not the situation in Bulgaria, Romania and Hungary. Conservative estimates for average litres of recoverable UCO per capita are 8 l/cap and 6.26 l/cap.

6. Total FAME production in the EU-25 in 2005 has been estimated to 3.2 million tonnes. It can thus be concluded that the UCOME production in the ten BioDieNet countries constitutes about 13 % of the FAME produced in EU-25.
7. Local authorities are best placed to operate UCO collection services for catering establishments, but there is no core funding available for this service. Core funding may be available for domestic collection but the logistics make this a difficult endeavour. The food industry, is likely to already have found its solution to UCO waste. However, if a biodiesel producer is able to get hold of this material at the right price, then it could provide a very valuable, high-quality source of UCO. However, the most likely and reliable UCO source for a small-scale biodiesel producer will be from catering establishments.
8. The average cost of 23.4 was estimated for the cost of UCO collection. Costs for a collection will very much depend on UCO generator ie domestic or catering or industry, and the particulars of your locality. Some research suggests that the actual operating costs could be as low as 8 to collect UCO from catering establishments if collection is kept “in-house”. The viability of a biodiesel plant will depend very heavily on the price for which it can obtain its raw material. The ideal scenario would be to be able to operate a free collection service.
9. The main problems encountered in UCO collection schemes were: Pouring of mineral oil in public containers; Low temperatures creating handling problems; Overcooking of oil which increase Free Fatty Acids (FFAs); Too much saturated fats; Illegal collections.
10. Classic industrial steps to biodiesel production are: 1. Oil pre-treatment 2. Free Fatty Acids elimination 3. Drying 4. Transesterification in reactors 5. Separation phase 6. Washing 7. Drying. Glycerine purification 8. Additive injection.
11. Choice of the fats or oils to be used in producing biodiesel is both a process chemistry decision and an economic decision. With respect to process chemistry, the greatest difference among the choices of fats and oils is the amount of FFAs.
12. Options for raw material are: Primary biomass (energy crops); secondary biomass and organic waste. Process catalyst options are: Alkaline catalysis; Acid catalysts; Heterogeneous catalysis; Enzymatic catalysis; No catalysts (Biox Co-Solvent Process & supercritical process). Process options are: Batch or Continuous. Batch processing is most common in small plants of less than 4 million litres/year.
13. For setting-up a biodiesel plant a project must take into account the following legislation: Health & Safety; Oil Storage; Fire prevention and control; Integrated Pollution Prevention and Control (IPPC); Planning; Taxation. By far the biggest and most arduous task with regards to legitimising the biodiesel plant is obtaining an Integrated Pollution Prevention and Control (IPPC) licence. The IPPC follows Council Directive 96/61/EC and is applied in each country via its own national laws. Costs of an IPPC licence can vary between 3000 and 35,000, depending on the size of operation.
14. The nature of the business under consideration by the BioDieNet project (small scale, localised biodiesel production), means that each enterprise likely to have 3 or 4 staff. 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. Energy 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. Potential sources of funds for a small-scale biodiesel projects 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. The arguments for biodiesel are principally for Energy Security and Climate Change. There are other benefits, well documented, such as improvements in most local emissions, its reduced environmental impacts in case of spillage, job creation etc. But above all, biofuels are the only direct substitute for oil in transport that is currently available on a significant scale.
17. There is consensus in the literature that the use of biodiesel in place of petroleum diesel will result in significant GHG savings, with the potential for up to 80% from oil crops. The GHG savings potential of a scheme recycling UCO into biodiesel could be near on 100%.
18. Statistical analyses show a reduction of the local emissions of CO, HC, and PM10 by an average of 27%, 36%, 24% respectively for neat biodiesel relative to petroleum diesel. It is also predicted that up to around 30% that biodiesel will be NOx neutral although after that will increase. Hence any responsible environmental strategy would include a NOx mitigation policy. There is agreement that the use of biodiesel results in both a decrease in emissions of PAH, and in mutagenic activity.
19. Heated fuel lines are recommended for cold weather as B100 has higher cloud point than fossil diesel. Rubber components should be replaced with biodiesel resistant parts and similarly biodiesel should not be brought into contact with brass, bronze, copper, lead, tin, and zinc as this may accelerate oxidation. Normally if warranty is approved for 100biodiesel this will be provided that the standard engine oil change interval is halved, and similarly the oil and fuel filter change interval is halved.
20. The two critical factors affecting the biodiesel market are taxation and the warranty approval for the vehicles. 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 fuels, including biofuels, and vehicle manufacturers vary their warranty approval between countries.
21. Germany, has been the leader in the field of biodiesel for over 10 years, with a proactive approach and favourable tax regime. At the end of 2006, total sales of biofuels were 3.1 million tonnes (all biofuels). But Volkswagen Group (VW, Audi, SEAT, Skoda) has stopped issuing warranty approval since the introduction of the EURO 4 engines and selfregenerating particle filters. This could seriously damage the market and reverse the trend.
22. Any assessment of your local market should include: Number of diesel vehicles in your region; Quantity of diesel consumed in your region; Quantity of biodiesel already consumed in your region; Local government fleets composition and fuel usage; Local public transport fleets composition and fuel usage; Number of independent filling stations in your region.
23. There are a number of options for dealing with Warranty issues: Creating consumer pressure by making clear to the manufacturers that providing warranties for biodiesel will be an important factor in decision-making for purchase of new vehicles; Undertaking a liability transfer where the risk is shifted onto the local authority or other public body; Development of your own warranty; Or simply promoting biodiesel for the vehicle pool that is out of warranty.
24. Favourable warranties are found with the following: Mercedes Benz, DaimlerChrysler, MAN and IVECO who have given approvals for EURO-4 and EURO-5 truck engines in commercial vehicles; Almost all agricultural vehicle manufacturers; The French manufacturers PSA Peugeot Citroën and Renault approve warranties for their vehicles up to B30 under certain conditions. This offers sales prospects of at least 10 years. The public sector, whether it be bus fleets or waste collection vehicles is likely to be “path of least resistance” for biodiesel sales.
25. Recommendations: Local Authority and Energy Agency to participate in biodiesel projects;

Closing of the loop by uniting the supply chain; Development of a UCO policy to make catering waste the responsibility of local authorities; In-depth EU-wide studies on UCO availability undertaken by official bodies; A fast-track system for IPPC applications for biodiesel plants; Widening of the scope of potential feedstocks in the quality standard EN14214; Development of an EU-wide quality assurance scheme; Making it compulsory that all EC Euro emissions standards be met using biofuels as well as fossil diesel; Promote biodiesel-friendly manufacturers such as PSA group.



## 3. The Ripa Exchange

### 3.1 Theorems

This is an example of theorems.

#### 3.1.1 Several equations

This is a theorem consisting of several equations.

**Theorem 3.1.1 — Name of the theorem.** In  $E = \mathbb{R}^n$  all norms are equivalent. It has the properties:

$$\| |\mathbf{x}| - |\mathbf{y}| \| \leq \| \mathbf{x} - \mathbf{y} \| \quad (3.1)$$

$$\| \sum_{i=1}^n \mathbf{x}_i \| \leq \sum_{i=1}^n \| \mathbf{x}_i \| \quad \text{where } n \text{ is a finite integer} \quad (3.2)$$

#### 3.1.2 Single Line

This is a theorem consisting of just one line.

**Theorem 3.1.2** A set  $\mathcal{D}(G)$  is dense in  $L^2(G)$ ,  $|\cdot|_0$ .

### 3.2 Definitions

This is an example of a definition. A definition could be mathematical or it could define a concept.

**Definition 3.2.1 — Definition name.** Given a vector space  $E$ , a norm on  $E$  is an application, denoted  $\| \cdot \|$ ,  $E$  in  $\mathbb{R}^+ = [0, +\infty[$  such that:

$$\| \mathbf{x} \| = 0 \Rightarrow \mathbf{x} = \mathbf{0} \quad (3.3)$$

$$\| \lambda \mathbf{x} \| = |\lambda| \cdot \| \mathbf{x} \| \quad (3.4)$$

$$\| \mathbf{x} + \mathbf{y} \| \leq \| \mathbf{x} \| + \| \mathbf{y} \| \quad (3.5)$$

### 3.3 Notations

**Notation 3.1.** Given an open subset  $G$  of  $\mathbb{R}^n$ , the set of functions  $\varphi$  are:

1. *Bounded support G;*
  2. *Infinitely differentiable;*
- a vector space is denoted by  $\mathcal{D}(G)$ .

## 3.4 Remarks

This is an example of a remark.

 The concepts presented here are now in conventional employment in mathematics. Vector spaces are taken over the field  $\mathbb{K} = \mathbb{R}$ , however, established properties are easily extended to  $\mathbb{K} = \mathbb{C}$ .

## 3.5 Corollaries

This is an example of a corollary.

**Corollary 3.5.1 — Corollary name.** The concepts presented here are now in conventional employment in mathematics. Vector spaces are taken over the field  $\mathbb{K} = \mathbb{R}$ , however, established properties are easily extended to  $\mathbb{K} = \mathbb{C}$ .

## 3.6 Propositions

This is an example of propositions.

### 3.6.1 Several equations

**Proposition 3.6.1 — Proposition name.** It has the properties:

$$|||\mathbf{x}|| - ||\mathbf{y}||| \leq ||\mathbf{x} - \mathbf{y}|| \quad (3.6)$$

$$||\sum_{i=1}^n \mathbf{x}_i|| \leq \sum_{i=1}^n ||\mathbf{x}_i|| \quad \text{where } n \text{ is a finite integer} \quad (3.7)$$

### 3.6.2 Single Line

**Proposition 3.6.2** Let  $f, g \in L^2(G)$ ; if  $\forall \varphi \in \mathcal{D}(G)$ ,  $(f, \varphi)_0 = (g, \varphi)_0$  then  $f = g$ .

## 3.7 Examples

This is an example of examples.

### 3.7.1 Equation and Text

■ **Example 3.1** Let  $G = \{x \in \mathbb{R}^2 : |x| < 3\}$  and denoted by:  $x^0 = (1, 1)$ ; consider the function:

$$f(x) = \begin{cases} e^{|x|} & \text{si } |x - x^0| \leq 1/2 \\ 0 & \text{si } |x - x^0| > 1/2 \end{cases} \quad (3.8)$$

The function  $f$  has bounded support, we can take  $A = \{x \in \mathbb{R}^2 : |x - x^0| \leq 1/2 + \varepsilon\}$  for all  $\varepsilon \in ]0; 5/2 - \sqrt{2}[$ . ■

### 3.7.2 Paragraph of Text

■ **Example 3.2 — Example name.** Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

■

## 3.8 Exercises

This is an example of an exercise.

■ **Exercise 3.1** This is a good place to ask a question to test learning progress or further cement ideas into students' minds.

■

## 3.9 Problems

**Problem 3.1** What is the average airspeed velocity of an unladen swallow?

## 3.10 Vocabulary

Define a word to improve a students' vocabulary.

**Vocabulary 3.1 — Word.** Definition of word.



## 4. The Ripa Blockchain

### 4.1 Table

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table 4.1: Table caption

### 4.2 Figure

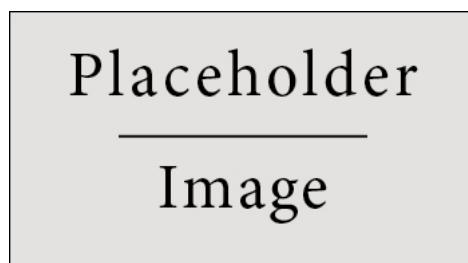


Figure 4.1: Figure caption



## 5. Token Sale

### 5.1 Table

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table 5.1: Table caption

### 5.2 Figure



Figure 5.1: Figure caption



## 6. Conclusion



## 7. Legal



## References

- [1] ACES Crew. *ARK Contract Execution Services: a blockchain interoperability platform for a new world.* URL: <https://arkaces.com/>. (accessed: 01.01.2018) (cited on page 6).
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