

ROULETH



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European Roulette on Ethereum Blockchain.

Document for Investors :

INTRODUCTION :

For sake of clarity, it should be specified that this document is a draft intended to expose the main features of the European Roulette on Ethereum Blockchain as it is currently envisaged by its founders.

As a consequence, the information provided within this draft may be subject to modification and could be adjusted during the implementation of the application.

A final version will be edited and sent to each Investor at the earliest opportunity

Rouleth is an Ethereum Decentralized Application (Dapp) that allows to gamble ethers (Ethereum's cryptocurrency) on an European Roulette, one of the eldest and most famous gambling game, allegedly invented by Blaise Pascal, the famous French mathematician and philosopher.

Ethereum is a peer to peer cryptographic network that allows to run decentralized and autonomous (server-less) computer code ("smart contracts") with the security and reliability of the blockchain's consensus mechanism (currently based on proof of work).

ROULETH, A NEW PARADIGM FOR GAMBLING : DECENTRALIZATION AND TRANSPARENCY

As a forefront *Ethereum* dapp and the most advanced gambling game on *Ethereum* - **Rouleth** demonstrates that **gambling on ethereum** provides **several benefits compared to gambling in fiat and other cryptocurrencies (Bitcoin ...)** :

- Gambling on *Rouleth* is guaranteed to be **provably fair**.
Rouleth Random Number Generation (R.N.G.) is based on future block-hashes using a commitment mechanism by players. Since *Rouleth's* computer code and all data used are **publicly secured by the whole ethereum network**, any bet's result can be fully analyzed by anyone. Players **do not have to trust the casino** since no one can temper with the results. Receipts can be provided after each bet and allow the player to verify any result.
- Gambling in cryptocurrencies provides an advantage compared to fiat since it allows to have **fast payments and does not require the user to create an account**. With **Ethereum** and its very short delays between blocks (~12secs), **account-less gambling is made nearly instantaneous for the first time**.
- Compared to other cryptocurrencies' games, for instance *Bitcoin* and the very successful *Satoshi Dice*, **Ethereum allows to build more complex and GUI-integrated games. Rouleth goes much further** than simple dices games and players can finally have the full gaming experience they seek.
- Finally, *Ethereum* unique technology of smart contracts gives the **opportunity to anyone to invest in the casino's bankroll and development** in a fully **autonomous, decentralized and trust-less** fashion. It provides as such a unique business model and investment opportunity.

Draft. Property of Rouleth.com, WhySoS3rious and Dappster

As such, *Rouleth* provides an unique model for players and investors that will forever change the nature of gambling.

*The current document presents all information regarding investing in *Rouleth* and is structured in the following way (interactive menu) :*

I) PROJECT ROULETH :

Developers, History and Current Version.



II) INVESTING IN ROULETH :

Motivations, Target and Contract Rules.



III) GAME DEVELOPMENT AND GROWTH :

Development, Marketing and Budget.



IV) INVESTMENTS RISKS :

Law, Code Security and Miner Cheating.



V) HOW TO INVEST IN ROULETH WITH YOUR FAVORITE ETHEREUM WALLET ?



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I] PROJECT ROULETH :



1) PROJECT HISTORY :

Rouleth's smart contract and website were created by 2 friends, WhySoS3rious and Dappster, that are involved in the Ethereum community since the beginning of 2016. Rouleth project initially started as a project for fun on which they worked during their free time. The first smart contract and website of the game were released on June 10th 2016. A second version that greatly improved the user graphical experience was then released 2 week later.

Very quickly, the game encountered [a lot of success among the ethereum community](#) both from players and investors.

The 2 developers were thus quickly swamped by the all the work it required in addition to their usual day jobs. Seeing all the enthusiasm that the game received from the community, the developers decided to devote themselves more fully to *Rouleth's* development and take the time to implement features requested by the community.

After a maintenance break of 2 weeks, **the developers are now presenting the version 2.0 of Rouleth which brings to the public a new edition of the game : the great gambling dapp** the Ethereum's players deserve, also redesigned to promote its long-term market growth and reward investors more properly.

2) GAME DEVELOPERS AND MANAGERS :

[Whysos3rious](#) is a Ph.D. teacher and researcher in Decision and Game Theory. He is also a software developer and has already developed 2 other small games dapps on Ethereum Blockchain.

[Dappster](#) is currently a web-designer and digital marketer in a start-up. He has a strong experience in game design and has built board games (among others, one previous collaboration with WhySoS3rious).

3) CURRENT VERSION OF THE GAME :

This document was written for the launch of the 4th release of the game : *Rouleth 2.0*.

The current implementation of Rouleth was built using Ethereum solidity programming language. Players and investors can interact with the contract using solely the ethereum clients built by the Ethereum Foundation (geth, eth, parity and/or mist browser ...).

However to improve players experience, Rouleth can also be played with the help of a website interface (www.rouleth.com) that is based on a Node.js server fully integrated with ethereum blockchain via web3.js .



II] INVESTING IN ROULETH :



1) ROLE OF INVESTMENTS :

Investments will be mostly **(90%) oriented to the bankroll** and will increase the maximum allowed bet. This will provide a better gambling experience for all players and benefit investors in return. Like any casino, *Rouleth* relies on investors putting money on the table to reward players bets.

Individual players win and lose, but on average **the house has a small probability edge of ~ 2.7%** that serves as a reward to the casino for the entertaining experience it provides. This edge also rewards the investors for the small risk they are taking (if the players are extremely lucky the casino could lose money). **Investors will thus earn money on the long-run proportionally to their share of the total bankroll.**

The amount earned by investors will be directly dependent on the volume of bets played on the game. **10% of the initial investments will thus be allocated to the game marketing and development in order to rapidly increase the amount of players placed on *Rouleth*.**

Properly managed, the casino should be **profitable in the long run** (with statistical confidence). The maximum bet allowed has to be computed through statistical analysis to yield high confidence in the long-run survival of the casino. The maximum bet and payout have to be significantly smaller than the casino bankroll. *Rouleth* implements these calculations and allows for a ratio ($\text{max_payout}/\text{current_bankroll}$) of 1/200 at start which we aim to bring as low as 1/800 depending on the amount raised from investors. In other terms, the casino will try to reduce its risk for investors by using on average the following formula for the maximum payout :

$$\text{Current_Bankroll} = \text{max_payout} * 500$$

2) TARGETED INITIAL BANKROLL :

Using Ethereum's block-hashes as a source of randomness could expose *Rouleth* to miners cheating if the maximum bet allowed per block is high enough (cf. Investment risks for more details). But computer simulations run by the development team indicated that if the maximum bet remains **under 0.5 ether, no miner could cheat profitably** and would lose money running this strategy. Similar simulations also showed that it requires at least 3% of mining power of the whole network to be able to cheat profitably no matter the bet limit. We thus **plan to increase the bet size later on** once we have developed effective monitoring techniques.

We will then start with a **initial target of 0.5 ether as bet limit.**

This requires **a bankroll between 7000 and 14 000 ethers** depending on the safety ratio adopted. And thus in total between 7700 and 15 500 ethers.



3) BLOCKCHAIN CONTRACT CODE ON RULES OF INVESTMENT :

The blockchain contract code implements rules that determine how investors can interact with the contract and claim payouts. These rules of the smart contract, hard-coded in the code can only be changed by a control of more than 51% of the network.

Given the targeted total amount for the investments, the contract allows **only for 77 "VIP Members" investors (wallet addresses)**. The minimum initial investment is 100 ethers and the maximum total investment is 200 ethers per address. As long as they respect these given limits, investors can add ethers to their accounts in an incremental way (min 20 eth per additional deposit). **Note that investments should only be made by regular ethereum wallet addresses and not from a contract address.**

These initial settings can not be changed until at least 25 000 bets have been placed on Rouleth. To allow further game growth, bet limit increase, and later entry of investors, after this number of 25 000 bets has been reached, the developer can consult the 77 VIP members to determine if they want to allow for **Extra investors**.

VIP members will be able to call a function in the contract to vote to determine the **entry fees rate** that will be applied on later investments. The maximum number of investors is hard capped to 777. The fees on later investments, that represent the estimated increment of value of the *Rouleth* brand, will be **shared proportionally among the 77 VIP members**. Extra investors will enter the investor structure of the casino proportionally to their net investment after the fees for the initial founders VIP investors.

Investors that join Rouleth **secure themselves a position forever** in the Rouleth smart contract. They can not be out-invested in any way unless they decide to withdraw all their funds. Investments are initially locked for a period of 1 month (configurable max to 1 year), after this period, **investors can fully claim any amount they want from their balance**. However if they bring their balance under the minimum investment setting they will execute a full withdraw and be removed from the casino investors list. **The number of VIP members is thus limited forever to 77** and may only decrease (if a VIP member decides to do a full withdraw).

Investors can call a function in the contract to transfer the ownership of their current account to an other wallet address. This can allow you to trade your Rouleth investor account later on.

10% of any investment is initially allocated to game development and 90% to the bankroll. The balance of investors will thus be initially brought down to the amount that is allocated to the bankroll. The rest will be used right away for expenses relative to game development and marketing.

Investors earn 80% of house profits distributed proportionally to their respective investments. This amount is added fully and directly to their own balance which they can withdraw at any time after the initial lock period.

Investor can thus expect to **earn globally 80% of 2.7% of the betting volume** on the game. As a comparison, **Satoshi dice profits** amounted to **more than 50 000 dollars per month** after only a year of activity.

Moreover, being the owner of an investor account in this limited investors structure will have value per se if the game becomes as successful as intended. **VIP investors accounts**, limited to a total of 77, **should then be extremely valuable** since they give a right on future investors entry fees.



III] GAME DEVELOPMENT AND GROWTH :



1) GAME DEVELOPMENT :

Rouleth 2.0 implements several enhancements to the gaming experience. The community feedback on the previous versions allowed us to tailor our game to the need of our players.

Game speed and easiness have been greatly improved. Rouleth can now be **played with only one transaction**. We developed a *croupier bot* that sends transactions on the blockchain to spin the wheel after each bet has been placed by players. Players can now expect **less than 30 secs** from their initial bet until they receive a loss (1 wei) or win payout from the contract.

The website now updates automatically once the transactions have been received. Playability will be further improved with a **soon released version of the game for Mist Browser**. This will achieve to integrate the gaming experience and will bring the game to a whole new level.

Interactions between players will be also increased with a **chat** fully integrated in the website and animated by Rouleth members.

2) DIGITAL MARKETING STRATEGY :

Among the Ethereum community :

Initially, Rouleth communicates on ethereum reddit and other ethereum forums. Rouleth also has a strong presence on twitter (@Rouleth, @whysos3rious, @dappsthereum). Communication on other social media will also be developed in the next months.

Extending to the Bitcoin community :

Bitcoin already has a large community of players and they should appreciate the improvements brought by ethereum gambling. A tutorial will be realized very shortly to show how someone that owns Bitcoins could play Rouleth in a matter of minutes thanks to shapeshift and Jaxx for instance.

Rouleth.cn domain name has been deposited to develop the game in China. In 2015, 70% of all bitcoin transactions were made in this country.

Guiding and attracting users unexperienced with cryptocurrencies :

A Youtube channel with video tutorials will be developed and advertised to help unexperienced users to discover gambling with cryptocurrencies. Several targeted marketing campaigns will advertise the huge benefits of blockchain's provably fair gambling and should attract many users of classical online gambling websites.



3) USE OF INVESTMENTS AND PROFIT ALLOCATED TO GAME DEVELOPMENT : BUDGET

Rouleth needs to finance several expenses and to remunerate its development as a full scale gambling website. **Thus 10% of each initial investment and 20% of the gambling profits are allocated to this purpose.**

These funds are projected to be allocated as follows :

Rouleth.com initial launch and marketing :

(10% of the initial investments, between 700 to 1400 ethers)

- Legal audit expenses.
- Marketing campaigns to get new users from bitcoin and outside crypto.
- Development and research on the game.
- Graphics improvements.
- Security and Gambling audits.
- Potential participation to Devcon2 in Shanghai.

Long Run maintenance and development :

(20% of gambling profits, variable amount)

- Servers and domain name expenses
- Legal expenses for game development and security for the investors.
- Maintenance and further development of the game platform.
- Analysis and research on future implementations and evolutions.
- Marketing and community management in the long run.
- Artistic direction.
- Incentives for the developers to increase the game profits.

IV] INVESTMENT RISKS



1) LEGAL ASPECTS

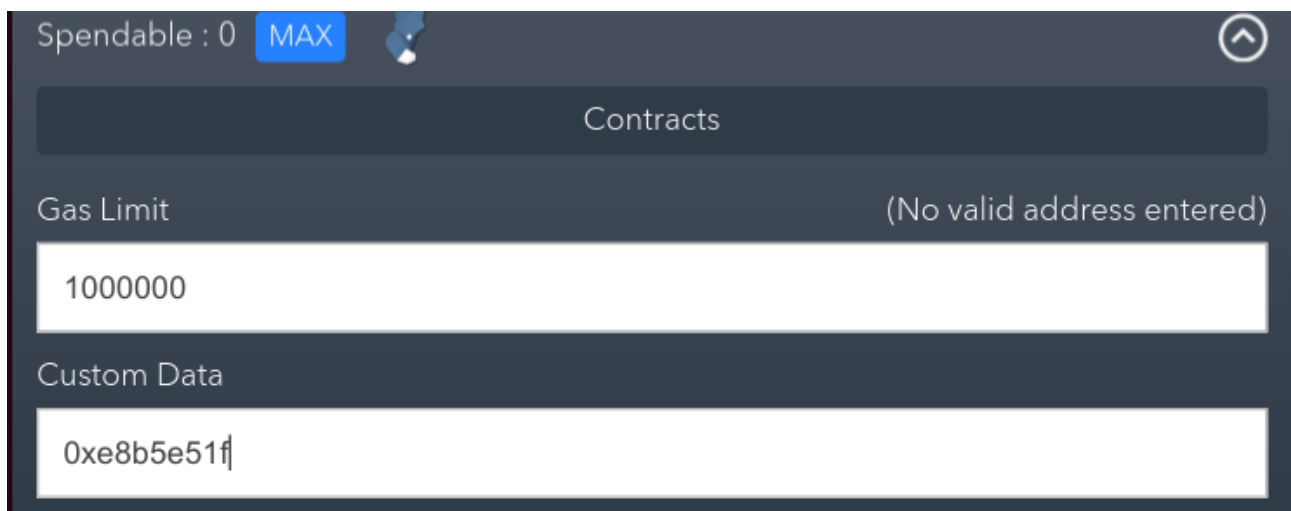
We are currently reviewing the legal implications of running the Rouleth dapp. **We are determining jointly with local lawyers the best structure (e.g. firm and gambling license) to ensure our long term success and to minimize the potential legal risk of all users of Rouleth.com**

We are currently investigating all legal aspects surrounding the project and notably the investment structure and the operation of a gambling dapp.

2) CONTRACT CODE SECURITY

This is the **third version of Rouleth's smart contract**. The first and the second version were **live for a month with ~800 Ether** and funds security has been guaranteed in every ways. The contract was already immune to the hack that affected the DAO and any other known exploits but the code security was hardened for this release. The contract was reviewed extensively by several ethereum developers and we considered that a paid security audit would provide too few additional guarantees to be required at this time.





However without mist wallet you will not be able to check your balances nor to perform partial withdraws. **Warning**, note also that since **Jaxx** creates several addresses, if you use it to invest, to withdraw you will have to retrieve the same address.

2) WITH MIST WALLET :

- Open Mist wallet and go to **the contract tab**.
- Go to the bottom and click on **watch contract**
- A box 3 fields appears :

for **the name** enter The Roulette

for **the address** enter the address of the contract :

 [0x18a672e11d637ffadccc99b152f4895da069601](https://etherscan.io/address/0x18a672e11d637ffadccc99b152f4895da069601)

for the **JSON interface** (ABI) copy paste the code from this link



Use the Invest function and the withdraw function to manage your balance. Use the information functions to check your balance and check the profit and loss not yet updated

Finally note that this is only an autonomous contract uploaded to ethereum blockchain. It's experimental software and not a safe investment. If you chose to participate, take the time to read the code and do so under your own responsibility.

INVESTMENTS MUST BE MADE ONLY FROM A REGULAR ETHEREUM ADDRESS THAT YOU OWN. NO CONTRACTS, NO EXCHANGES

