Pump Roulette: Technical Whitepaper

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(Dated: January 23, 2024)

In this technical whitepaper I will describe the Pump Roulette smart contract in detail.

I. INTRODUCTION

Crypto pump groups thrive all over the internet. Their organizers announce the token to be pumped every week or so. Group organizers have foreknowledge on which token is going to be pumped. They accumulate tokens before the pump and then unload them to the group members after announcing the pump. This practice is both unfair and unethical.

Our goal is to end unethical business practices of these pump organizers who take advantage of their community. This is achieved by Pump Roulette smart contract.

II. PUMP ROULETTE TOKEN

A. PRT token distribution scheme

The total supply of PRT tokens is fixed at 21 millions just like in the case of Bitcoin. Moreover, the PRT token distribution scheme is Bitcoin-like.

There exists a remarkable infinite series which converges to 1:

$$1 = \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots$$

Let us rewrite it as follows

$$21 \cdot 10^6 = 21 \cdot 10^6 \left(\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots \right)$$

Here, $1/2$ corresponds to the distribution fraction in the first epoch, $1/4$ corresponds to that of in the second epoch, etc.

Let's take one epoch equal exactly to 210 weeks. This is a little longer than the 4 years time period. How many PRT tokens will be distributed weekly during the first epoch? Let's calculate:

$$\frac{21 \cdot 10^6 \cdot \frac{1}{2}}{210} = 50,000$$

Thus, during the first epoch of 210 weeks, 50,000 PRT tokens will be distributed weekly. During the second epoch of 210 weeks, 25,000 PRT tokens will be distributed weekly. During the third epoch of 210 weeks, 12,500 PRT tokens will be distributed weekly. During the fourth epoch of 210 weeks, 6,250 PRT tokens will be distributed weekly, etc.

One can write the following equation for the number of PRT tokens distributed at the end of the w-*th* week:

$$D^{(w)} = \frac{50,000}{2^{\text{RoundDown}[(w-1)/210]}}, \tag{1}$$

here we assume that first week corresponds to $w = 1$.

B. PRT token creation

PRT token will be created on Ethereum as it is the most popular decentralized platform. Transactions such as swaps will be executed on Uniswap as it is the most liquid trading protocol on Ethereum network.

III. PUMP ROULETTE SMART CONTRACT

At the end of w-*th* week, $D^{(w)}$ PRT tokens are distributed, see Eq. (1). 36% of the weekly distribution (or $0.36\ D^{(w)}$ PRT tokens) are allocated to founders. The remaining 64% of the weekly distribution (or $0.64\ D^{(w)}$ PRT tokens) are distributed among participants.

A. PRT token distribution

Weekly distribution of $0.64\ D^{(w)}$ PRT tokens among participants works as follows. i-*th* participant contributes $C_i^{(w)}$ ETH tokens to Pump Roulette smart contract (PRSC). During the contribution process participant votes for a token T_i to be selected as the weekly pump token. The total contribution in ETH during w-*th* week is equal to

$$C^{(w)} = \sum_i C_i^{(w)}, \tag{2}$$

where the sum is taken over all weekly participants.

In the end of w-*th* week, i-*th* participant gets

$$D_i^{(w)} = \frac{0.64\ D^{(w)}}{C^{(w)}}\ C_i^{(w)} \tag{3}$$

PRT tokens.

B. Pump token selection

Among all different token tickers voted for $\{T_i\}$ we select unique ones $\{U_j\}$. For each unique ticker U_j we

sum up all of its corresponding weekly contributions $C_{U_j}^{(w)} = \sum C_i^{(w)}(U_j)$.

The probability of token U_j to be selected as the weekly pump token is proportional to the weight of it's weekly contributions:

$$P^{(w)}(U_j) = C_{U_j}^{(w)}/C^{(w)}. \tag{4}$$

One can check that $\sum_j P^{(w)}(U_j) = 1$.

To randomly select the weekly pump token, PRSC employs Chainlink VRF (Verifiable Random Function).

C. Pump token announcement

Pump token is randomly selected and announced every week on Saturday at 4 pm Greenwich Mean Time (GMT). This corresponds to

- 8 am San Francisco / Las Vegas time

- 11 am New York time

- 4 pm London time

- 8 pm Moscow time

- 9:30 pm Mumbai / New Delhi time

- 12 pm Beijing / Shanghai time (Sunday)

- 1 am Seoul / Tokyo time (Sunday)

D. ETH allocation

At the end of w-*th* week, PRSC contains $C^{(w)}$ ETH, see Eq. (2). 36% of the weekly contribution (or 0.36 $C^{(w)}$ ETH tokens) is reserved for operations and advertising. The remaining 64% of the weekly contribution (or 0.64 $C^{(w)}$ ETH tokens) is directed towards PRT proof-of-burn protocol.

E. Proof-of-burn protocol

PRT proof-of-burn protocol executes weekly and has two stages.

1. PRT tokens buy back

To buy PRT tokens on the market PRSC taps into Uniswap PRT/ETH liquidity pool. 64% of the weekly contribution (or 0.64 $C^{(w)}$ ETH tokens) are swapped for $B^{(w)}$ PRT tokens on Uniswap. This swap increases the market price of PRT tokens.

2. PRT tokens burn

PRSC burns $B^{(w)}$ PRT tokens. This reduces PRT token supply, thus making PRT tokens deflationary.

ACKNOWLEDGMENTS