



WhitePaper

Decentralized Finance and Smart Contracts for Asset
Managers, Investors, and Traders

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ABSTRACT

RISQ Protocol is a collection of Decentralized Finance and smart contracts for asset managers, investors, and traders.

It is a straightforward system where investors and traders are protected, while asset managers are guaranteed by smart contracts.

RISQ is suitable for fund management by non-professionals, yet, at the same time, powerful enough for expert hedge fund managers. Fund investment policies and guidelines are written as smart contracts where 'code is law.'

RISQ handles hazards with on-chain call and put options that are entirely insured with liquidity pools. RISQ holders are paid Options Settlement fees, and LPs are rewarded with option premiums.

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OUR SOLUTION

\$RISQ Protocol will convey what decentralized records and blockchains have consistently guaranteed, which is a straightforward financial framework where code is law and each individual has equal access.

\$RISQ gains several standards and arrangements expressed in a conventional investment memorandum and authorizes them through smart contracts. The Protocol deals with each activity performed by the hedge fund.

The Protocol can replace conventional bookkeeping and administrative jobs with smart contracts. Currently, most traditional hedge funds allocate almost \$100,000 in yearly authoritative expenses for the same reporting roles. Instead, The BackOffice can monitor each deal made by a fund stored on the blockchain. Moreover, fabrication of trade history or exaggeration of NAV cannot be performed by fund managers. Each aspect is completely disclosed to the fund manager, while the external reviewers can confirm all things down to last Wei.

Each asset made on \$RISQ Protocol incorporates its own Vault contract where investor tokens are isolated and warehoused. Asset managers will not be able to withdraw their tokens since they can be utilized merely to be exchanged on decentralized trades incorporated with \$RISQ Protocol.

The \$RISQ Terminal is a decentralized solicitation for investors and asset managers, where the latter could create and handle a hedge fund from the Terminal, while the clients could see information and purchase Shares from there.

The \$RISQ Terminal could be accessed by anyone, while the hedge fund could be invested or created by anyone with zero KYC requirements. Regulated hedge funds could also use the \$RISQ Terminal, where a "whitelisted" fund could be created. In this fund, only AML and KYC verified investors could purchase Shares since these are locked to the general population.

DeFi Hedge Funds could be exchanged on several trades simultaneously with admission to the greatest liquid crypto assets. With puts and on-chain calls, the fund managers could earn hedge crypto assets provided by \$RISQ. As a different policy, options can also be written(sold) to acquire ETH premiums.

Anyone, and not just fund managers, can enter the OptionsDesk dApp. Puts and calls could be purchased by each trader, who can also add to Liquidity Pools to sell options. Token holders who stake \$RISQ will be paid the entire value of trading fees from Options Settlement payments given by OptionsDesk.

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SYNOPSIS

RISQ Protocol maintains two standard decentralized applications and their equivalent smart contracts, which operate in combination yet could be acquired and utilized as a single component since the RISQ token acts as its mutual criterion.

DeFi HEDGE FUNDS

Exchanging RISQ Options is a choice, however not needed. Hedge funds accumulate Prime Broker Gas expenses that activate the Buy and Burn RISQ factor of the Protocol.

RISQ OPTIONS DESK

Without creating a fund, each trader could enter and utilize RISQ Options to purchase puts and calls, while fund managers could also access all the same factors. Each payment charge is shared with RISQ token buyers who claim their RISQ.



DeFi HEDGE FUNDS

4. DeFi Hedge Funds

A fund is a collection of smart contracts that oversee the investment system of the DeFi Hedge Fund. When a fund is created, a set of regulations is established by the fund manager. This is entirely straightforward to the investor. The fund investors can view the trade designation rules as well as the crypto assets in which the fund is permitted to invest. On behalf of the fund, the tokens are safeguarded and isolated in a "vault."

Shares of a fund can be purchased by the fund investors, which offers them a division of proprietorship in the fund. When investors enter or leave a fund, fund shares are generated and burned and are not exchangeable. When investors leave the fund, the number of fundamental assets and the share value received by them determine the number of shares generated for new investors.

The "Accountant" smart contract gives the cost of the Share. Likewise, the Accountant monitors the Net Asset Value and Gross Asset Value and initiates the expense installments for the asset.

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4.1 Back Office

Monitors each module, arranges funds, and controls access. The Runner Contracts and BackOffice compose the central contract structure of the DeFi fund. Runner and BackOffice is an engineering configuration that aids and explains each of the fund's moving elements as developed by an interlinked procedure of connected smart contracts. The BackOffice has the complete related data for all Runners enlisted with the BackOffice. Every Runner will autonomously have all pertinent data about the BackOffice. The individual Runner will gain programmed entry to data in other distinct individual Runners.

Commonly, for each fund, an independent, unique Runner Contract and a singular BackOffice contract are available. The BackOffice shapes the center of the singular DeFi fund with every Runner funding particular administrations to the asset.

4.2 Fund Manager

The Manager (Fund Manager) is the core player in the DeFi Hedge Fund. The Fund Manager is the inventor of the DeFi Fund and per se, the proprietor of the DeFi Fund smart contract. With this ability, the Fund Manager structures the preliminary arrangement of the DeFi Hedge Fund, comprising:

- Fund Name
- Asset Tokens applicable for Redemption and Subscription
- Trades to be utilized
- Performance and Administration Payments
- Rules and Risk Engineering related to Asset strategies
- Compliance procedures related to Investor contribution

4.3 Accounting.sol

The Accounting contract outlines the accounting regulations that the fund has executed. Each function related to the primary fund positions, gross and total asset value estimations, asset token payments and estimating, and fund position handling per-share estimations are included in the business logic of this contract.

Management Fees: Management payments are procured with the progression of time, independent of execution. The Management Fee share amount estimation is an essential factor in the Performance Fee computation since fund performance should be abridged by the Management Fee cost to determine total performance reasonably.

Performance Fees: Performance Fees build over the long run with execution. However, they must be reaped on a schedule. This period is the Measurement Period and is chosen by the asset manager and designed at fund establishment.

Performance is reviewed toward the end of the Measurement Period by associating the asset's present share value net of Management Fees to the asset's present high-water mark (HWM).

The HWM addresses the most elevated share valuation, which the DeFi fund has truly accomplished at a Measurement Period finishing time. To explain plainly, instead of being an all-time-high fund, it is the maximum share valuation of all Measurement Period-end depiction valuations.

RISQ Protocol incorporates decentralized exchanges to enable Assets trading, which is one of the crucial functionalities of a DeFi Hedge Fund. That is, if a fund is to draw from an extensive liquidity pool, it should house several variations of decentralized exchanges smart contracts.

The Trading Factory generates the trading contract, which maintains a questionable range of each generated Trading contract and emits the instance created event as well as the location of the trading contract.

The Trading Contract:

- handles the structure of the interface framework to several chosen trades.
- handles open orders submitted by the fund to several registered trades.
- holds the general operation for calling particular exchange functions through the individual exchange adapters of each exchange. A unique interface and necessary constraints will be provided to each exchange accommodated by the adapters.
- offers a public function to allocate a range of token assets to the vault of the fund.
- offers view functions to receive order data about particular assets on certain exchanges and detailed order information.

Exchange Adapters: These are smart contracts that interact openly and on-chain with the proposed DEX smart contract. They function as an interpretation channel between the DEX and the DeFi Fund. Presently, RISQ Protocol has adapters to incorporate the subsequent DEXs:

- UniSwap
- KyberSwap
- Paraswap
- Synthetix

Each trade is attached to a particular adapter by the canonical registrar. A fund can take advantage of different exchanges, given they are listed by the registrar.

4.4 Fund Policy - Policy.sol

Polices are singular smart contracts that characterize regulation or guidelines associated with the hedge fund state. Policies survey the present status of the fund and decide on a boolean choice such as if the activity might be implemented or not, returning true for permitted activities and false for denied activities.

4.5 UserWhitelist.sol

UserWhitelist.sol - This contract characterizes an effective channel list against which subscribing locations are checked for membership. Locations of the members are allowed to subscribe to the fund.

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RISQ PROTOCOL.
OPTIONS DESK

5. Risq Protocol Options Desk

RISQ Protocol is a non-custodial on-chain options trading desk. Call and Put options are backed 100% by the underlying crypto asset through incentivized liquidity pools. All trading desk functions are available to both individual traders and fund managers. Anyone can participate as a speculator or hedge crypto holdings against price movements. Traders can act as buyers of puts and calls or as an options writer looking to collect premiums.

Buyers (holders) will conceivably be able to profit by utilizing options contracts to guard the value of their assets against drawbacks during a specific duration. An options contract guards the proprietor against the impending value decrease of an asset in a similar way to insurance. On the conventional financial markets, no danger is visible in the options trading distribution, which is why the losses of sellers (writers) are hypothetically limitless.

Writers could conceivably have an advantage since the danger in options contracts is shifted from a single specific individual to an entire team of liquidity suppliers. Furthermore, the profits on selling (writing) options contracts could conceivably overcome the on-chain lending profits since, in order to ensure the danger of losses for writers, the premiums compensated by holders must be higher. The on-chain settlement and contract pricing transparency could benefit both sellers and buyers. Hence, options contracts on RISQ Protocol are regarded as censorship-resistant, unreliable, and non-custodial contracts.

Similar to the on-chain contract, the Put contract is an Option where the holder is provided an entitlement to sell or purchase an asset at a specific price (strike), and the writer is forced to perform the duty of selling or purchasing an asset during a specific duration. It may be valuable for the liquidity suppliers who may discover the profits on selling options contracts sufficiently alluring to designate a portion of their capital on the liquidity pool contract and the market members who need to shield their resources from the price downside. Sellers and buyers are considered individual institutional or retail agents on crypto-assets options exchanges such as FTX, Deribit, and others, as well as on the long-established options exchanges such as CME, CBOE. It implies that while exchanging options, their capital is subject to autonomous dangers and profits, and their exchanging outcomes do not affect the losses or profits of other market members. While considering the writers, liquidity from numerous market members is accumulated at the same time in RISQ liquidity contracts. This methodology decreases the dangers of losing capital (possible downside) while offering liquidity suppliers profits.

When a trader buys a call or a put, they pay an option premium. The premium price depends on the strike price, order size, and expiration. Calls and put holders can be exercised at any time before expiration, and exercising is guaranteed by the liquidity locked on the underlying crypto asset. All options premiums are paid in ETH or BNB depending on the chain used and underlying asset. Selling calls and puts is done by adding liquidity to the Bidirectional Liquidity Pool for a given crypto asset. Options writers do not have to place orders to write a call or a put. It is done through the automated market maker, and option premiums are distributed after an option expires.

Example: An options writer sells one put option contract on RISQ and another put option on the traditional market without liquidity pools. The strike (execution) value of both

situations is equal: \$2000. That is, the seller currently has a responsibility to purchase an asset at any specific duration for \$2000 before the option/options contract expires. In this situation, the aim is to relate the losses and not the profits of these two implements. This is the reason why the premium for selling both option and options contract is nil, particularly in this case.

Let's consider that the value of a theoretical asset drops from \$2000 to \$1500 before expiration, after selling a put contract. Since the seller is responsible for purchasing the asset for \$2000, they would undergo losses since the current value is \$1500. Nevertheless, when selling an options contract, the seller is one of the forty separate liquidity providers, and the risks are dispersed between them. The theoretical results can now be seen below:

5.a

Writing (Selling) a Put Option Contract vs. Writing (Selling) a RISQ Put Contract		
	OPTION	RISQ PROTOCOL
Writer	Traditional	Liquidity Providers
Pool Size	1	40
Strike Price	\$2000	\$2000
Market Price	\$1500	\$1500
Losses	-\$500	-\$12.50 / LP

Three additional variables could be included:

5.1 Premium: the cost of an option contract, which is paid to the option's seller by the option's buyer for the rights expressed by the option contract. The capacity of the premium is equal on RISQ Protocol, where a monetary prize is offered for the sellers of the options contract for facing the challenges.

5.2 Rate: the previously established value of starting an options contract that controls the value of an options contract, otherwise known as the premium. The value information could be obtained from the Pricing Model part of this study.

5.3 Expiration date: the maturity period where the option/options contract becomes invalid. Timestamps are utilized by RISQ for arranging the expiration date for an options contract.

Compared above are the theoretical outcomes of a scenario whereby the value of an asset moves in a way that causes the sellers to face losses.

The possible profits for an options contract seller and an option seller are illustrated with the new variables given. The prior example and the one provided below are alike: to relate the dangers and profits, a seller trades both Risq Protocol put option and put option contract. He trades a single put options contract on RISQ, while trading another put option contract on the traditional market. The strike value of \$2000 is equal in both scenarios.

Nonetheless, the asset's value increases to \$2500 in this scenario. The seller will not undergo losses and yields the premium reimbursed by the option/ options contract seller.

5.3.a.

Writing (Selling) a Put Option Contract vs. Writing (Selling) a Put Options contract		
	OPTION	RISQ PROTOCOL
Writer	Traditional	Liquidity Providers
Pool Size	1	20
Strike Price	\$2000	\$2000
Market Price	\$2500	\$2500
Expiration Date	1 Week	1 Week
Rate	2%	2%
Premium	\$40	\$40
Net Premium	\$40	\$40

Premiums and settlement fees are paid in ETH, giving Liquidity Pool providers and \$RISQ Holders the chance to earn yield in ETH, not \$RISQ Token. Many DeFi yield farming projects award the same token with high APY % rates. This can put downward pressure on market prices as holders look to harvest rewards and sell for ETH.

\$RISQ holders earn 100% of the settlement fees from options trades. Settlement fees are based on the underlying crypto asset. Rewards are distributed every quarter to anyone holding a staking position of 10,000 RISQ on the OptionsDesk.



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PUT CONTRACTS

6.1 Purchasing (Opening) a Put Contract

A procedure of creating an options contract from the point of view of a buyer is portrayed in this module. The buyer wants to have the options contract using ETH as an asset. He plans to shield his ETH from the value downside for the two upcoming weeks. In order to hold the shield, they can purchase a put contract on RISQ.

The buyer selects the preferred variables for opening the options contract. One ETH is the amount of ETH that the buyer wishes to buy an option contract for in this example. Two weeks is the preferred holding duration, while \$3200 is the ETH's current market value. Chainlink oracles are utilized for monitoring ETH/USD combinations, where they can be operated as a value feed information to analyze the value of ETH in real-time. It should be addressed that this is the one section of the RISQ system which utilizes oracles to employ with the exterior value feeds, which cannot be held responsible for the implementation and maintenance of options contracts. This method is implemented for avoiding exploits and attacks of oracles from value assaults and for ensuring the protection of active options contracts. This helps shield the active options contracts from the influences of oracles.

The buyer selected the \$3200 strike value for a 1 ETH option contract with a duration of fourteen days (ETH's market value will be \$3200 for an at-the-money options contract). \$100 will be the value of such an options contract. For fourteen days ETH put options contract, \$80 will be the 4% rate, while \$20 will be the 1% repayment expense of the at-the-money put option contract. Additionally, the buyer must compensate \$100 to activate the options contract.

The buyer dispatches the value equivalent of \$100 (the value of the options contract with the variables selected by the buyer.) in ETH or BNB as the conceivable payment approach during the beginning execution of RISQ.

In this example, the buyer decides to pay \$100 in ETH and dispatches 0.04 ETH to initiate an options contract. The contract will inspect the sum after receiving the payment. If the \$100 value is compensated appropriately, the options contract would be initiated. If a lower sum, lesser than \$100, is paid by the holder, the option contract would deny the deal, and the value would be reverted to the ETH address of the buyer. If the sum is higher and more than \$100, the options contract would be initiated with the \$100, and the remaining value would be reverted to the ETH address of the buyer.

While the initiation of the options contract is happening, an "end timestamp" would also be generated. In this case, two weeks is the period of the options contract. This explains that the "end timestamp" would be generated for fourteen days after the payment is received.

6.2 Selling (Writing) a Put Contract

This module explains the procedure of selling a put contract from a seller's point of view. The sellers of put option contracts are liquidity providers who deposit WBTC, ETH, BNB, LINK, UNI, COMP, SNX, and other tokens on the liquidity pool contracts.

RISQ liquidity pools are non-sheltered. The sellers' assets cannot be accessed by anybody except the buyers for whom they are assigned by the options contact within a particular duration. The motivating force for the sellers to offer liquidity is acquiring premiums that the buyers are paying in order to shield their crypto-funds from the value downside.

Example: The seller deposits BNB to the liquidity pool contract and gains writeBNB tokens (ERC20), which are mechanically minted and contribute to the liquidity pool premiums shared among every liquidity provider. If the seller intends to take back their BNB, he should transfer the writeBNB tokens to the liquidity pool contract before using the "burn" operation. Consequently, the BNB will be immediately transferred to the address of the seller.

The example from the preceding module could be utilized to explain the options contract selling procedure. For a put options contract of 1 ETH with an expiration of fourteen days, the buyer picks the \$3200 strike value (\$3200 is the ETH market value; at-the-money). \$100 is the value of the particular put options contract. In this case, the buyer decides to compensate \$100 in ETH and sends 0.04 ETH to initiate the options contract. The premium, which is 0.04 ETH, is then sent to liquidity providers. They are not required to wait until the expiration date of the options contract in order to receive the ETH premium. Once the premium is earned, the ETH liquidity would be inaccessible for a specific duration of an option contract compensated by the buyer.

The seller will need to wait for the expiration of active options contracts if the sum of inaccessible ETH in the liquidity pool is insufficient for him to exchange his writeETH to ETH. If the seller intends to retract the liquidity from the pool, yet the sum of inaccessible ETH is insufficient, he must convey a request to exchange his writeETH to ETH whenever the liquidity becomes accessible. Their requests are accumulated in queues. ETH Premiums shall be shared between the liquidity providers in the ETH amounts assigned by them in the liquidity pool.

Let's consider that four autonomous liquidity providers have offered 200 LINK to the pool: Supplier 1 has offered 100 LINK; Supplier 2 has offered 50 LINK; Supplier 3 has offered 25 LINK, and Supplier 4 has offered 25 LINK. This means that all premiums would be shared in this manner: 50% for Supplier 1; 25% for Supplier 2; 12.5% for Supplier 3; and 12.5% for Supplier 4. The same share would be allocated for the losses that may happen if the options contracts buyers exchange their ETH to LINK after the value decline. ETH sent by the buyers to the liquidity pool during options contract implementation would be mechanically exchanged to LINK with the help of Uniswap decentralized exchange. Additionally, the possible losses for sellers are designated in LINK.

DECENTRALIZED OPTIONS TRADING PLATFORM

Investors and traders looking to protect their crypto assets from short-term price dips can buy Put Options. Profit from the downside while you HODL.

Non-custodial Call and Put Options on the Blockchain

Buying Call Options can be an excellent way to buy the dip with less capital at risk. Call Options provide leverage without the margin requirements.

6.3 Pricing Framework for Put Contracts

This module will explain the pricing framework for RISQ based put option contracts. The buyer will be able to select an options contract with one of the strike rates pre-described on RISQ. The exercise rate of an option contract is the strike. If the buyer selects a \$2000 strike price on an option contract, they can sell the asset for \$2000 during the contract period, even if the asset's market rate is high or low. On RISQ, the strike rates are frequently varying within the 5% (Multiplier) range from the asset's current market rate:

6.a.

Put Option		Strike Price
Out-of-the-money	Market Price * Multiplier 0.9	\$1800
Out-of-the-money	Market Price * Multiplier 0.95	\$1900
At-the-money	Market Price	\$2000
In-the-money	Market Price * Multiplier 1.05	\$2100
In-the-money	Market Price * Multiplier 1.1	\$2200

A put options contract has the same logic as a put option contract: it is at-the-money if the contract's strike rate and the fundamental asset's market rate are the same; in-the-money if the strike rate is lower than the value of the asset; and out-of-the-money if the fundamental asset's market rate is higher than the strike rate. Each put options contract has a price that relies on the duration and strike:

6.b.

Put Contract		Contract Periods and Rates				
	Strike Price	1 Week	2 Weeks	3 Weeks	1 Month	2 Months
OTM	\$1800	0.5%	1%	1.5%	2%	4%
OTM	\$1900	1%	2%	3%	4%	8%
ATM	\$2000	2%	4%	6%	8%	16%
ITM	\$2100	1%	2%	3%	4%	8%
ITM	\$2200	0.05%	1%	1.5%	2%	4%

For effective minimalism, the pricing scheme for options contracts varies from the traditional financial market's options pricing schemes like Black-Scholes mathematical model since the underlying forces of a financial market contain imitative asset implements. The RISQ pricing is a pre-decided percent of the asset's value, which relies on the duration of an options contract. The rate of having a put options contract for a particular duration is known as premium.

6.c.

Put Contract		Contract Periods and Premiums				
	Strike Price	1 Week	2 Weeks	3 Weeks	4 Weeks	8 Weeks
OTM	\$1800	\$9	\$18	\$27	\$36	\$72
OTM	\$1900	\$19	\$38	\$57	\$76	\$152
ATM	\$2000	\$40	\$80	\$120	\$160	\$320
ITM	\$2100	\$121	\$142	\$163	\$184	\$268
ITM	\$2200	\$211	\$222	\$233	\$244	\$288

The formula for calculating the rate of an at-the-money (ATM) put options contract is:

$$* = ,$$

in which S is the Strike Rate; R is the pre-decided percentage rate; and ARMR is the ATM rate of put contract.

For instance, the price of having a put option contract with a \$2000 strike price for the duration of fourteen days is 4%. With the help of the aforementioned formula, the rate could be measured thus:

$$\$2000 * 4\% = \$80.$$

The formula for measuring the in-the-money (ITM) rate in put options contract is:

$$* + (-) = ,$$

in which S is the Strike Rate; R is the pre-decided percentage rate; M is the Market Price; and ITMR is the ITM Rate of the put contract.

For instance, 2% is the rate of having a put option contract with a \$2200 (in-the-money) strike rate for the duration of a month. Compared to the aforementioned scenario, this one is relatively lower. Nonetheless, in-the-money options contract's rate comprises the variation between market rates and the strike. With the help of the aforementioned formula, the premium value for an ITM options contract could be measured thus:

$$\$2200 * 2\% + (\$2200 - \$2000) = \$244$$

The formula for measuring an out-of-the-money (OTM) put options contract's rate is:

$$*=,$$

in which S is the Strike Rate; R is the pre-defined percentage rate, and OTMR is the OTM Rate of the put contract.

Both time value and intrinsic value are included in the put option contract's value. The value of time maintained by a put option contract will escalate with the increase in time amount until it expires. As expresses before, the formulas for at-the-money and out-of-the-money rates are equal. Nonetheless, the measurement of in-the-money rate varies since ATM and OTM options contracts hold only a single time-value, but the ITM option contracts also hold an intrinsic value. The buyer exercises their rights in a put option contract and sells their fundamental asset for a greater amount compared to its present rate. This explains that the ITM options contract maintains an intrinsic value. To initiate an options contract, the buyers should pay a settlement fee.

For instance, if 1 is the asset rate of the ATM options contract that the buyer wants to purchase and \$2000 is the market rate, \$20 will be the settlement fee since $(\$2000 * 1 * 1\% = \$20)$. The buyer must compensate the fee as well as the premium rate forward for creating an options contract.



LIQUIDITY POOLS

7. Liquidity Pools

After providing ETH, WBTC, LINK, or other tokens to the liquidity pool, writeASSET tokens shall be minted and sent to the ETH- address of the supplier. The formula for minting writeETH tokens is:

$$\Delta W = W * \Delta P / P$$

where ΔW —the amount of writeETH tokens received by the liquidity supplier;

ΔP —the sum of ETH tokens provided to the pool by a liquidity supplier;

W —the total amount of writeETH tokens that were already distributed;

P —the net sum of ETH tokens offered to the pool.

After offering liquidity, the senders would begin to gain premiums. They would join the pool and be able to receive the writing profits, beginning from the next buyer who will pay for initiating an options contract. The losses or premiums from writing options contracts initiated before a new liquidity supplier joined a pool would not be shared with this new liquidity supplier.

While allocating ETH in the pool on RISQ, the liquidity pool offers sellers the profits on ETH from the premiums that the buyers of the options contracts fund. Users are offered profits from the on-chain lending protocols that are compensated in real-time. The same predictability and stability could not be ensured by options contracts selling profits earned by liquidity suppliers on RISQ since they rely on the market instability of the assets for which the options contracts are carried. Nonetheless, the hypothetical profits on selling options contracts could be greater than the profits compensated by on-chain lending protocols. Selling options contracts have a different profit and loss profile and cannot be associated with on-chain lending. The variations among these two implements concerning intended profits could be planned. The fact that this is not an association of two competitive implements should be remembered since this module explained that options contract sellers are gaining DSR too, and these on-chain lending profits must be included in the intended profits of selling options contracts.

RISQ Protocol Crypto Options

How It Works

Option Seller AMM

Liquidity providers deposit tokens on which they wish to write (sell) options. LPs earn 100% of the premium (sale price) every time a call or put is purchased.

Option Buyers

Call and Put options are purchased in ETH or BNB, which is paid to LPs. Buyers choose the strike price and pay a settlement fee of 1% to RISQ holders.

RISQ Staking

RISQ holders earn rewards in the underlying crypto they want to stake. These rewards can be claimed immediately after a call or put is purchased.

Options Expiration

Buyers choose an expiration time of 1 day to 4 weeks. If an option is out of the money at expiration, it expires worthless, and 100% of the premium paid is released to LPs.

Exercising Options

An option contract can be exercised before the expiration time either to take a profit if it is in the money or at a loss if it is out of the money.

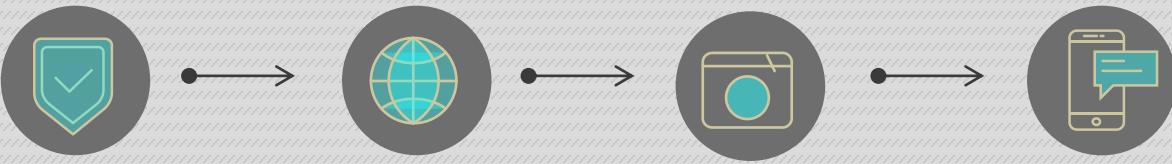
Option Premiums

Once an option is either exercised or expires, the option premium P&L is distributed to Liquidity Providers. Withdraw profits without having to remove Liquidity.

8. Staking Contracts

Real APY Staking Yields

Staking Lots earn a 1% fee on traded options in the underlying token. This means that if you buy a staking lot in the ETH Staking Contract you will earn rewards in ETH. Earn passive daily income in the tokens you want. Rewards are available for immediate withdraw as soon as a newly created call or put is confirmed on the network.



RISQ Staking Contracts

Crypto assets each have a RISQ staking contract.

RISQ Options Contracts

Options smart contract creates new call and put options.

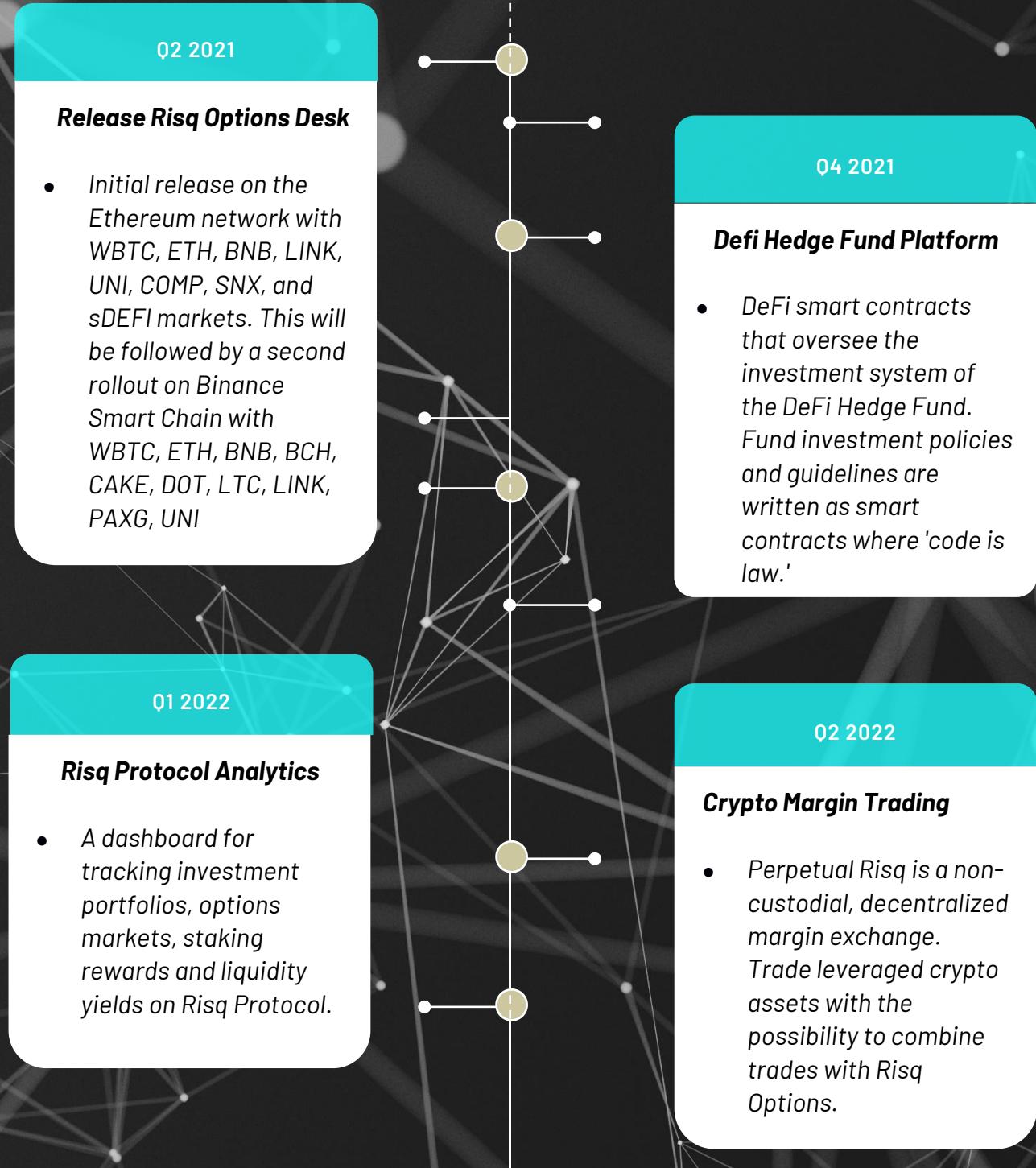
RISQ Options Pool

The liquidity pools collateralize new options.

RISQ Rewards Contract

Allows LP to stake their writeTokens to earn RISQ tokens.

9. Roadmap



10. References

Options References

1. FIA. (2020, January 16). *Global futures and options trading reaches record level in 2019.* Retrieved from Futures Industry Association:
<https://www.fia.org/resources/global-futures-and-options-trading-reaches-record-level-2019#:~:text=Washington%2C%20DC%E2%80%94Summary%20statistics%20released,record%20of%2034.47%20billion%20contracts>
2. OCC. (2014). *The Foundation for Secure Markets.* Retrieved from The Options Clearing Corporation: <https://www.theocc.com>
3. Investopedia. (2021, January 04). *Types of Options Positions That Create Unlimited Liability.* Retrieved from Investopedia:
<https://www.investopedia.com/ask/answers/050115/what-types-options-positions-create-unlimited-liability.asp>
4. Fischer, B. & Scholes, M. (May, 1973). *The Pricing of Options and Corporate Liabilities.* The University of Chicago Press. Retrieved from The Journal of Political Economy, Vol. 81, No. 3, pp. 637-654: <http://www.jstor.org/stable/1831029>
5. Deribit. (2017). *Cryptocurrency Futures & Options Trading.* Retrieved from Deribit:
<https://www.deribit.com>
6. Chainlink. (2021). *Oracle Network for Smart Contracts Real World Data.* Retrieved from Chainlink: <https://chain.link>
7. Dai (DAI). (n.d.). *A Better, Smarter Currency.* Retrieved from MakerDAO:
<https://makerdao.com/en>

8. Circle. (2021). *USDC: the world's leading digital dollar stablecoin*. Retrieved from Circle: <https://www.circle.com/en/usdc>

9. Tether. (2021). Digital money for a digital age. Retrieved from Tether: <https://tether.to>

10. Uniswap. (2020). *Uniswap Exchange Protocol Docs*. Retrieved from Uniswap/Docs: <https://docs.uniswap.io>

11. Chai. (n.d.). *Chai - A simple ERC20 wrapper over the Dai Savings Rate*. Retrieved from Learn more about Chai: <https://chai.money/about.html>

12. MarkerDAO. (n.d.). *Stability Fee*. Retrieved from Vaults at MarkerDAO: <https://community-development.makerdao.com/en/learn/vaults/stability-fees/>

Price Comparison Section:

1. ETH-7FEB20 Put Option Contract Prices (Deribit):

<https://ipfs.io/ipfs/QmZ2QBh93BA9f1m3DKpqjK9JjY5M2jBGbbcGZsyYuAnkDG>

2. ETH-14FEB20 Put Option Contract Prices (Deribit):

<https://ipfs.io/ipfs/QmQS0pHLNmX9Luea9EuysrkqRA1Af8UbfowJpvY3mNYq8z>

3. ETH-28FEB20 Put Option Contract Prices (Deribit):

<https://ipfs.io/ipfs/QmPqNKifKRrXLGQ48fTueJPwx7AU4XVoEotzH3SX6hHUyv>

4. ETH-27MAR20 Put Options Contract Prices (Deribit):

<https://ipfs.io/ipfs/QmUr2C2PMzvYFR6qNnFCjbfcfCfqp2KghVxPDirVXcZMxL>

5. ETH-14FEB20 Put Options Contract Prices (Deribit):

<https://ipfs.io/ipfs/QmQVt4gvkDeZxCCvVmBLD9T7XBfXSV2B3aamy8AbXZgm87>

Hedge Fund References WP

1. Augur. (2020). *Augur: Your global, no-limit betting platform*. Retrieved from Augur - decentralized prediction market: <http://www.augur.net/>

2. Press Release. (2013, December 12). *Deal reached on bank bail-in directive*. Retrieved from News European Parliament:

<https://www.europarl.europa.eu/news/en/press-room/20131212IPR30702/deal-reached-on-bank-bail-in-directive#:~:text=The%20directive%20establishes%20a%20bail,bills%20of%20a%20struggling%20bank.&text=The%20bail%2Din%20system%20will,take%20the%20first%20big%20hits.>

3. Digix. (2020). *The Future of Owning Gold is Digital*. Retrieved from Digix:

<https://digix.global/#/>

4. GitHub. (2015, November 19). *ERC - token standard #20*. Retrieved from GitHub/ Ethereum/ EIPs: <https://github.com/ethereum/EIPs/issues/20>

5. GitHub. (2021, March 15). *Ethereum Classic*. Retrieved from GitHub:

<https://ethereumclassic.org/>

6. Ethereum. (2021, March 19). *Ethereum platform*. Retrieved from Ethereum:
<https://ethereum.org/>
7. Etherex. (2021). *Etherex - decentralized exchange*. Retrieved from Etherex:
<https://etherex.github.io/etherex/#/>
8. Hedge fund cost survey.
<https://www.altassets.net/pdfs/KPMG%20Hedge%20Fund%20SurveySept2008.pdf>. Accessed: 2016-08-26.
9. Maker market. <https://github.com/makerdao/makermarket> Accessed: 2016-08-29.
10. t0. <https://www.tzero.com/>. Accessed: 2016-08-26.
11. N. M. et al. The Dai Credit System, 2015. <https://makerdao.com/dai02.pdf/>.
12. W. Sharpe. (1991, January - February). *The arithmetic of active management*. Retrieved from The Financial Analysts' Journal Vol. 47, No. 1, pages 7-9:
<https://web.stanford.edu/~wfsharpe/art/active/active.htm>
13. Pan, Wei; Altshuler, Yaniv; Pentland, Alex Paul. (2012, September). *Decoding Social Influence and the Wisdom of the Crowd in Financial Trading Network*. Retrieved from MIT Media Lab: <http://hdl.handle.net/1721.1/80764>
14. D. G. Wood. (2016). *Ethereum: A Secure Decentralised Generalised Transaction Ledger*, 2016. Retrieved from Gavwood: <https://gavwood.com/paper.pdf>

