Rumi Protocol: A Decentralized Stablecoin Built on Internet Computer

Chapter 1: Executive Summary

The Rumi Protocol represents the next generation of decentralized finance (DeFi) applications, designed to create a stable, scalable, and transparent foundation for users seeking financial freedom within the blockchain ecosystem. Built on the Internet Computer Protocol (ICP), Rumi Protocol introduces **icUSD**, a decentralized, collateral-backed stablecoin, and **RUMI**, a governance token that empowers participants to shape the protocol's future. By combining innovative stability mechanisms, dynamic collateral management, and a robust governance structure, Rumi Protocol aims to redefine the standards of decentralized financial systems.

The Need for a Decentralized Stablecoin

Stablecoins are a cornerstone of DeFi, enabling users to interact with blockchain-based applications while mitigating the volatility of traditional cryptocurrencies. However, existing stablecoin solutions often face challenges related to centralization, transparency, and maintaining a reliable peg. icUSD addresses these challenges by employing an over-collateralized model built on the scalability, security, and efficiency of the ICP blockchain.

icUSD: The Core of Financial Stability

icUSD is a decentralized stablecoin backed by collateral in the form of ICP, ckBTC, ckETH and other liquid crypto assets. To ensure the solvency and resilience of the system, each icUSD is backed by collateral that meets or exceeds a minimum **Liquidation Ratio (LR)**, initially set at 150% for all collateral types. Going forward, the protocol will implement collateral-specific LRs determined by governance, reflecting the unique risk profiles and volatility of different assets. By maintaining a substantial buffer of collateral, the protocol can withstand significant market downturns without jeopardizing the icUSD peg to the US dollar.

Stability is further reinforced through mechanisms like dynamic Liquidation Ratios and Redemption Margin Ratios (RMR). These parameters automatically adjust to market conditions, ensuring that the system remains balanced and responsive, and that icUSD remains a reliable medium of exchange and store of value.

RUMI: Empowering Governance and Growth

RUMI, the governance token of Rumi Protocol, places the community at the center of decision-making. Token holders can propose and vote on critical protocol parameters, oversee

treasury allocations, and guide the strategic direction of the ecosystem. RUMI staking offers participants benefits such as reduced fees, enhanced collateralization options, and governance privileges, incentivizing active involvement in shaping the protocol's evolution.

Key Features and Innovations

1. **Collateralized Stability:** Every icUSD is backed by robust, over-collateralized positions, ensuring solvency and mitigating the impact of market volatility.
2. **Dynamic Risk Management:** Real-time adjustments to system parameters help maintain stability and protect users' interests.
3. **Comprehensive Governance:** RUMI token holders drive protocol updates, parameters, and financial decisions, fostering a decentralized and community-driven ecosystem.
4. **Scalable Infrastructure:** Built on ICP, the protocol benefits from low transaction costs, high throughput, and seamless integration with both web2 and web3 environments.

Treasury and Incentive Allocation

The protocol's revenue and tokenomics are designed for long-term sustainability and growth. RUMI's distribution supports a wide range of stakeholders:

- **Core Team:** 15%
- **Angel Investors:** 2%
- **Seed Investors:** 10%
- **Potential Future Hires:** 5%
- **Crowd Sale:** 35%
- **Treasury:** 33% (for staking rewards, liquidity incentives, and ecosystem development)

Revenue from protocol fees—including minting, redemption, and liquidation fees—is reinvested through fee-buyback and burn mechanisms, reducing RUMI's circulating supply and supporting staking rewards. This holistic approach ensures that active participants, governance voters, and liquidity providers are all aligned with the protocol's success.

Vision for the Future

Rumi Protocol seeks to accelerate the global adoption of decentralized finance by providing a secure, transparent, and user-centric stablecoin. Leveraging the unique capabilities of ICP, the protocol aims to expand icUSD's role as a cornerstone asset in DeFi, enabling seamless integration across platforms, encouraging broader use cases, and empowering communities worldwide.

With its focus on dynamic risk management, community governance, and strategic incentive structures, Rumi Protocol is well-positioned to lead the evolution of decentralized finance, fostering a more accessible, resilient, and inclusive financial ecosystem for all.

Chapter 2: Introduction

The Stablecoin Landscape

Stablecoins have become a critical component of the decentralized finance (DeFi) ecosystem, providing a bridge between the stability of fiat currencies and the innovation of blockchain technology. While widely adopted, many stablecoins suffer from significant limitations:

1. **Centralization Risks**: Fiat-backed stablecoins rely on centralized custodians, creating points of failure and potential regulatory scrutiny.
2. **Algorithmic Vulnerabilities**: Algorithmic stablecoins, while decentralized, often lack the robustness to maintain their peg during periods of extreme market volatility.
3. **Scalability Challenges**: Existing systems can struggle to handle rapid growth in demand or integration with emerging blockchain platforms.

These limitations underscore the need for a more resilient, decentralized, and user-centric stablecoin protocol. Enter **icUSD**, the stablecoin at the heart of the Rumi Protocol.

The Rumi Protocol Solution

Rumi Protocol combines the most successful elements of existing stablecoin models, while addressing their shortcomings through innovation and the power of the Internet Computer Protocol (ICP). By leveraging an over-collateralized design, automated risk management systems, and a decentralized governance structure, Rumi Protocol creates a stablecoin that is secure, transparent, and scalable.

Key pillars of the Rumi Protocol's approach include:

1. **Over-Collateralization**: Users must lock ICP or other assets as collateral to mint icUSD, ensuring the system maintains solvency even during market downturns.
2. **Dynamic Risk Management**: Advanced mechanisms such as Liquidation Ratios (LR) and Redemption Margin Ratios (RMR) adjust in real-time to market conditions, minimizing risk and maintaining the icUSD peg.
3. **Decentralized Governance**: RUMI token holders play an active role in protocol decision-making, fostering a community-driven ecosystem.

Why the Internet Computer (ICP)?

The Internet Computer (ICP) offers a revolutionary blockchain environment, providing several unique advantages that make it the ideal platform for Rumi Protocol:

1. **Scalability**: ICP's architecture supports high transaction throughput and low latency, ensuring seamless performance even as the protocol scales.
2. **Low Transaction Costs**: Minimal fees enable cost-effective transactions, benefiting users and incentivizing broader adoption.

3. **HTTPS Outcalls**: ICP's integration with web2 services allows Rumi Protocol to access real-time market data for automated risk management and dynamic adjustments.
4. **Security and Decentralization**: As a decentralized, secure blockchain, ICP ensures trust and transparency across the protocol.

The Role of icUSD in DeFi

As a decentralized stablecoin, icUSD aims to serve a variety of use cases within the DeFi ecosystem, including:

- **Lending and Borrowing**: icUSD enables collateralized lending and borrowing, unlocking liquidity for users without requiring the sale of their assets.
- **Yield Farming and Liquidity Provision**: Users can earn rewards by participating in icUSD-based liquidity pools.
- **Store of Value**: icUSD offers a reliable means of preserving value during periods of cryptocurrency market volatility.
- **Payment Solutions**: Its stable value makes icUSD an ideal medium for peer-to-peer payments and cross-border transactions.

The Need for Governance

Decentralized governance ensures that Rumi Protocol remains adaptive, transparent, and aligned with the interests of its community. Through RUMI token governance, participants can:

- Propose and vote on changes to protocol parameters.
- Allocate treasury funds to development, incentives, and ecosystem growth.
- Guide the evolution of the protocol based on user needs and market trends.

The Rumi Protocol Advantage

By combining the stability of over-collateralization, the innovation of dynamic risk management, and the scalability of ICP, Rumi Protocol provides a compelling alternative to existing stablecoin models. Its user-centric design and robust governance structure position icUSD as a stablecoin solution that is not only reliable but also future-proof.

Bridging the Gap

Rumi Protocol aims to bridge the gap between stability and innovation in the DeFi ecosystem, creating a foundation that supports decentralized applications, enables seamless financial interactions, and promotes long-term adoption. Through icUSD and RUMI, the protocol sets a new standard for decentralized stablecoins, offering users a trusted and versatile tool for navigating the financial future.

Chapter 3: Governance

The Role of Governance in Rumi Protocol

Governance lies at the core of Rumi Protocol, enabling decentralized decision-making and ensuring the long-term stability, security, and adaptability of the system. The governance framework is powered by the **RUMI** token, which grants holders the ability to propose, discuss, and vote on critical protocol parameters and developments. This decentralized governance structure aligns the interests of the community with the protocol's success, ensuring that Rumi Protocol remains flexible and evolves in response to the dynamic DeFi landscape.

RUMI Token Overview

RUMI is the governance token of Rumi Protocol, designed to foster community participation and incentivize meaningful engagement. RUMI tokens empower their holders by offering both monetary and non-monetary benefits:

1. **Voting Power**: RUMI holders can vote on protocol upgrades, changes to collateralization thresholds, treasury allocations, and more.
2. **Proposal Creation**: Token holders with a sufficient stake can propose new initiatives or modifications to the protocol.
3. **Protocol Access**: RUMI stakers enjoy reduced protocol fees, enhanced collateralization limits, and early access to new features.

Governance Structure

The Rumi Protocol employs a multi-layered governance system to ensure efficiency, transparency, and inclusivity:

1. **Proposal Submission**: Community members can submit proposals for protocol upgrades, parameter adjustments, or treasury allocations. Proposals require a minimum RUMI token stake to ensure they represent significant community interest.
2. **Deliberation Phase**: Submitted proposals undergo a deliberation period, during which community members can discuss and provide feedback.
3. **Voting**: RUMI token holders vote on proposals through a transparent, decentralized mechanism. Each RUMI token represents one vote.
4. **Implementation**: Approved proposals are implemented through automated smart contracts, minimizing delays and manual intervention.

Staking and Governance Neurons

To participate in governance, RUMI token holders can lock their tokens to create **RUMI Neurons**, a staking mechanism that aligns incentives and rewards active participants. Key features of the neuron system include:

1. **Staking Rewards**: RUMI Neurons earn rewards based on the staked amount and their level of participation in governance activities.

2. **Lock-Up Periods**: Participants can choose lock-up periods for their RUMI tokens, with longer durations earning higher rewards.
3. **Non-Monetary Incentives**: Neuron holders gain access to premium governance features, such as exclusive proposal rights and elevated voting power.

Governance Transparency and Security

The Rumi Protocol governance system emphasizes transparency and security:

1. **On-Chain Voting**: All voting and proposal activities occur on-chain, ensuring immutable records and tamper-proof results.
2. **Public Participation**: Governance discussions are open to all community members, fostering inclusivity and diverse perspectives.
3. **Override Mechanism**: The governance system includes safeguards, allowing the community to address emergencies or unforeseen issues swiftly.

Community and Ecosystem Growth

Governance plays a pivotal role in fostering a vibrant and engaged community:

1. **Treasury Allocations**: RUMI token holders decide how to allocate funds for ecosystem development, partnerships, and grants.
2. **Feedback Loops**: Governance mechanisms ensure that community feedback is incorporated into protocol upgrades and new features.
3. **Decentralized Leadership**: The protocol's direction is guided collectively by its participants, reducing reliance on centralized decision-makers.

Incentivizing Participation

To ensure active engagement in governance, Rumi Protocol incorporates several incentive mechanisms:

1. **Staking Rewards**: A portion of protocol revenue is allocated to reward RUMI stakers for their participation in governance.
2. **Fee Discounts**: RUMI stakers benefit from reduced fees for protocol services, encouraging long-term participation.
3. **Governance Privileges**: Active participants gain enhanced voting power, proposal rights, and early access to new features.

The Long-Term Vision for Governance

The Rumi Protocol governance model is designed to evolve as the protocol grows. Initial decisions and parameters will be guided by the founding team, transitioning to a fully decentralized governance structure as the community matures. This phased approach ensures a balance between stability and innovation, allowing the protocol to adapt to new challenges and opportunities.

By empowering its community through RUMI token governance, Rumi Protocol creates a foundation of trust, transparency, and collective ownership, positioning itself as a leader in decentralized financial systems.

Chapter 4: Tokenomics

Token Allocation

The RUMI tokenomics model is meticulously designed to balance the needs of ecosystem growth, governance participation, and long-term sustainability. The allocation of RUMI tokens is as follows:

1. **Core Team (15%)**: Reserved for the founding team and key contributors, aligning incentives for long-term protocol success.
2. **Angel Investors (2%)**: Early supporters who provided initial funding and strategic guidance.
3. **Seed Investors (10%)**: Investors from the seed round who enabled early development and deployment.
4. **Potential Future Hires (5%)**: Allocated for attracting top-tier talent as the protocol scales.
5. **Crowd Sale (35%)**: Distributed through public sales to ensure broad ownership and decentralization.
6. **Treasury (33%)**: Dedicated to staking rewards, liquidity incentives, ecosystem development, and partnerships.

This distribution ensures the Rumi Protocol's financial sustainability and incentivizes long-term participation.

Revenue Models

Rumi Protocol generates revenue through a variety of mechanisms, all designed to create value for the ecosystem and incentivize active participation:

1. **Minting Fees**: A small percentage fee is charged when users mint icUSD, contributing to protocol revenue.
2. **Redemption Fees**: Fees collected when users redeem icUSD for collateral assets help sustain protocol operations.
3. **Liquidation Fees**: When under-collateralized positions are liquidated, a portion of the collateral is collected as a fee.
4. **Stability Pool Fees**: Users participating in the stability pool earn rewards funded by protocol revenue.

Revenue is strategically reinvested to enhance the protocol's ecosystem, fund governance activities, and incentivize user participation.

Fee-Buyback and Burn

A key component of the RUMI tokenomics model is the **fee-buyback and burn mechanism**. Protocol revenue is used to purchase RUMI tokens on the open market, which are then burned to reduce the circulating supply. This mechanism benefits RUMI holders by:

- Creating upward price pressure on the token.
- Increasing the scarcity of RUMI over time.
- Aligning protocol growth with token value appreciation.

Staking Rewards and Incentives

To encourage active participation, Rumi Protocol allocates a significant portion of its treasury to staking rewards. These rewards are distributed to RUMI stakers who contribute to the protocol's governance and stability. Additionally, stakers enjoy:

- **Fee Discounts**: Reduced fees on protocol transactions.
- **Enhanced Collateralization**: Access to higher Loan-to-Value (LTV) ratios.
- **Priority Governance Rights**: Early access to voting and proposal mechanisms.

Sustainability and Long-Term Goals

The tokenomics model prioritizes sustainability by balancing incentives with fiscal responsibility. Treasury funds are managed transparently, with allocations reviewed and adjusted by governance to ensure alignment with the protocol's goals. Key objectives include:

- Supporting liquidity provision during the bootstrapping phase.
- Funding ecosystem growth through partnerships and grants.
- Ensuring sufficient reserves for unforeseen events.

Treasury Allocation for Revenue

Revenue collected through fees is allocated as follows:

1. **Stability Mechanisms (50%)**:
    - Liquidations: 30%
    - Bonds: 10%
    - Redemptions: 10%
2. **Incentive Programs (25%)**:
    - Stability Pool Rewards: 15%
    - Liquidity Provision: 10%
3. **Governance & Operations (15%)**:
    - RUMI Neuron Rewards: 10%

    - Protocol Operations: 5%
4. **Reserve Fund (10%)**:
    - Maintained as a buffer for emergencies and systemic risk.
5. **Ecosystem Growth (5%)**:
    - Grants, integrations, and strategic partnerships.

Summary

The RUMI tokenomics model reflects a carefully crafted balance between growth, stability, and community empowerment. By aligning incentives for all stakeholders, the model ensures that Rumi Protocol remains adaptable and robust in an ever-evolving DeFi landscape.

Chapter 5: Protocol Mechanics

Collateralization and Minting

The Rumi Protocol enables users to mint icUSD by locking eligible collateral assets in the system. To ensure stability and protect the protocol from market volatility, a Liquidation Ratio (LR) is enforced, requiring users to maintain a sufficient buffer of collateral at all times. Different collateral types will have varying LRs, but for simplicity, we will use 150% as an example in this paper.

Eligible Collateral:

- **ICP**: The Internet Computer's native token, leveraging its scalability and security.
- **ckBTC**: Tokenized Bitcoin on ICP, offering cross-chain compatibility.
- **ckETH**: Tokenized Ethereum on ICP, providing diversity and interoperability.
- **ckXAUT**: Tether's tokenized gold, offering a stable and inflation-resistant collateral option.

Minting Process

1. **Collateral Deposit**:
    - Users deposit eligible collateral into the protocol.
    - Eligible collateral types include ICP and other assets approved by governance.
2. **icUSD Minting**:
    - icUSD is minted up to 66.67% of the collateral’s value, aligning with the 150% collateralization ratio.
    - Users receive icUSD proportional to their collateral value, minus the minting fee.
3. **Minting Fee**:
    - A small fee, expressed as a percentage of the icUSD minted, is deducted and allocated to the protocol treasury.

- For example, if a user mints 1,000 icUSD with a 0.5% minting fee, they receive 995 icUSD, and 5 icUSD is directed to the treasury.
- The fee ensures the protocol's sustainability and supports treasury-funded initiatives such as rewards, stability mechanisms, and liquidity provision.

Treasury Implications

By collecting minting fees in icUSD, the treasury benefits from holding a highly liquid and stable asset, ensuring it can fund operations, distribute incentives, and maintain peg stability with minimal complexity.

Isolated Collateral Pools:

To enhance risk management, each collateral type is managed within its own isolated pool, with distinct risk parameters such as Loan-to-Value (LTV) ratios and liquidation thresholds. This segregation minimizes systemic risks and enables onboarding of diverse collateral types.

Liquidation Mechanism

Liquidation serves as a safeguard to maintain the solvency of the system and protect icUSD's peg to the US dollar. Positions that fall below the 150% LR are flagged for liquidation.

Liquidation Triggers:

- If the collateral-to-debt ratio (CDR) of a position drops below 150% due to market volatility or excessive borrowing, the position is liquidated.
    - **Example**: A user with $1,500 worth of collateral who has minted $1,000 in icUSD would be liquidated if the collateral value drops below $1,500.

Liquidation Process:

1. The protocol seizes the collateral, repays the outstanding icUSD debt, and deducts a liquidation fee.
2. Any remaining collateral is returned to the user.

Temporary Debt Minting Mechanism

1. **Minting icUSD**:
    - During liquidation events where there is a shortage of icUSD liquidity, the protocol temporarily mints icUSD.
    - This icUSD is used directly to purchase collateral from liquidated positions at a discount.
2. **Collateral Handling**:

- The collateral purchased through liquidations is added to the protocol's treasury reserves, contributing to Protocol-Owned Liquidity (POL).
- These reserves are explicitly marked as **redeemable**, meaning any circulating icUSD (including non-borrower-tied icUSD) can be redeemed against the treasury's reserves.

3. **Circulating icUSD**:

    - The temporarily minted icUSD is effectively transferred to market participants (e.g., Stability Pool depositors or external buyers of liquidated collateral).
    - This icUSD becomes part of the circulating supply and remains backed by the newly acquired treasury reserves.

4. **Redemption Eligibility**:

    - The collateral added to the treasury reserves ensures that all circulating icUSD remains fully backed.
    - Users holding icUSD can redeem it directly against the treasury's reserves, maintaining the 1:1 peg to the US dollar.

Why This Mechanism Works

- **Maintains Peg and Trust**: By backing all icUSD with collateral held in the treasury, the protocol ensures that every icUSD is redeemable and fully collateralized.
- **Supports Liquidity**: Treasury-held collateral provides a buffer for redemptions, especially during times of high redemption demand.
- **Simplifies Transparency**: The dashboard can display clear metrics showing:
    - Total circulating icUSD.
    - Borrower-tied vs. non-borrower-tied icUSD.
    - Treasury reserves available for redemption.

Key Considerations

1. **Treasury Governance**:

    - Governance must decide how the treasury reserves are managed, including when and how collateral is sold or used.

2. **Transparency**:

    - Real-time data on treasury reserves and their backing ratio should be displayed to ensure user trust.

3. **Redemption Ratio**:

    - Redemption should occur at a 1:1 ratio (1 icUSD = $1 worth of collateral) to maintain peg stability.

Example Scenario

1. **Liquidation Event**:
    - A user with $1,500 worth of collateral (at a 150% LR) has minted 1,000 icUSD. Due to market volatility, their collateral value drops to $1,400, triggering liquidation.
    - The protocol mints 1,000 icUSD to purchase the collateral at a discount (e.g., $1,200 worth of collateral).
2. **Collateral Added to Treasury**:
    - The protocol acquires $1,200 worth of collateral and adds it to treasury reserves.
    - The 1,000 icUSD temporarily minted now circulates in the market and is fully backed by the $1,200 of newly acquired collateral.
3. **Redemption**:
    - Any icUSD holder can redeem their icUSD against the treasury reserves. For example, a user holding 500 icUSD can redeem it for $500 worth of the collateral in the treasury.

Benefits

- **Fairness**: All icUSD remains fully backed and redeemable, regardless of whether it is tied to a borrower or the treasury.
- **Stability**: The treasury reserves serve as a safety net, ensuring that the peg remains stable even during volatile market conditions.
- **Resilience**: By adding liquidated collateral to the treasury, the protocol builds a strong reserve that can support long-term stability and ecosystem growth.

This approach ensures that the system remains transparent, resilient, and aligned with user trust, while efficiently handling the challenges of temporary icUSD minting.

Alternative Loan Repayment Mechanism:

To enhance liquidity during times of icUSD shortages, the protocol allows liquidators to repay loans using alternative stablecoins, such as ckUSDT or ckUSDC. The mechanism functions as follows:

1. **Stablecoin Repayment**: Liquidators can settle outstanding debts with ckUSDT or ckUSDC at equivalent value.
2. **POL Integration**: The protocol absorbs these stablecoins into its protocol-owned liquidity (POL), providing additional reserves and flexibility for future operations.
3. **Conversion**: These stablecoins can later be swapped for icUSD with a small fee, maintaining liquidity while incentivizing icUSD adoption.

This mechanism ensures that liquidation processes remain efficient, even during icUSD shortages, and diversifies the protocol's liquidity base.

Stability Pool

- The Stability Pool is a critical mechanism that ensures liquidations are executed smoothly while maintaining system solvency.
- Participants deposit **icUSD** into the Stability Pool, which is used to repay the debt of undercollateralized positions during liquidations.
- In exchange for their contribution, Stability Pool participants receive:
- **Liquidated Collateral**: A portion of the collateral from liquidated positions is distributed to participants, proportional to their icUSD deposits.
- **RUMI Token Rewards**: To incentivize participation, users earn RUMI tokens based on their share of the pool.

How the Stability Pool Works

- **Liquidation Event**:
    - When a borrower's collateralization ratio falls below the Liquidation Ratio (e.g., 150%), their position is flagged for liquidation.
    - The Stability Pool provides the icUSD needed to repay the liquidated borrower's debt.
- **Collateral Distribution**:
    - The liquidated collateral is transferred to Stability Pool participants, distributed proportionally based on their icUSD contributions.
    - For example, if a participant holds 10% of the total icUSD in the pool, they receive 10% of the liquidated collateral.
- **Incentives**:
    - Participants earn RUMI tokens as rewards for their role in maintaining system stability.
    - Rewards encourage long-term participation and help maintain a sufficiently funded Stability Pool.

Why This Design Works

- **System Solvency**: By covering liquidated debt, the Stability Pool ensures the protocol remains over-collateralized and solvent.
- **User Incentives**: Distributing liquidated collateral and rewards motivates users to contribute their icUSD to the pool.
- **Peg Stability**: By absorbing liquidated debt, the Stability Pool helps manage icUSD supply and prevents disruptions in the peg.

Key Clarification

- The Stability Pool absorbs **debt (icUSD)** from liquidated positions and distributes **collateral** to participants. This ensures the protocol retains over-collateralization and incentivizes stability.

Dynamic Risk Management

The protocol incorporates automated systems to adjust risk parameters dynamically, ensuring stability even during periods of extreme market volatility.

Collateral Price Monitoring:

- Real-time price feeds are sourced via HTTPS outcalls to track collateral asset values.

Automated Adjustments:

- Liquidation Ratios (LR) can be dynamically adjusted upwards during market stress to maintain solvency and reduce systemic risk.

Dynamic Collateral Discount Adjustments:

- The protocol dynamically adjusts collateral discounts during liquidations to attract buyers when market demand is low.

Governance Oversight:

- While automated systems handle most adjustments, governance retains the ability to intervene in exceptional circumstances.

Self-Repaying Loans with Yield-Bearing Collateral

The Rumi Protocol introduces a unique mechanism enabling self-repaying loans using yield-bearing collateral. This innovative feature allows users to deposit assets such as **nICP**—a liquid staking derivative of ICP that accrues value through increasing redemption rates—and leverage the yield generated by the collateral to reduce their outstanding icUSD debt over time. This not only enhances capital efficiency but also reduces the risk of liquidation for borrowers.

Mechanics of Self-Repaying Loans

1. **nICP as Collateral**:
    - Users deposit nICP as collateral to mint icUSD. The initial Loan-to-Value (LTV) ratio is calculated based on the current redemption value of nICP.

- For example, at a redemption rate of 1 nICP = 1 ICP, 100 nICP is valued at 100 ICP. At an LTV of 66.67%, a user can mint up to 66.67 icUSD.

2. **Tracking Yield Accrual**:

    - The protocol monitors the redemption value of nICP over time via price feeds. As the redemption value increases, the accrued yield is calculated in real-time.
    - This ensures precise and transparent tracking of collateral growth for each user.

3. **Debt Reduction**:

    - A portion of the accrued yield is applied to reduce the borrower's icUSD debt balance. Instead of converting nICP to icUSD on the open market, the protocol absorbs the corresponding nICP into the treasury and burns an equivalent amount of icUSD from the borrower's outstanding loan.
    - For instance, if the redemption rate of nICP rises from 1 ICP to 1.1 ICP, the collateral value increases by 10%. From the $200 accrued yield, the protocol might absorb $50 worth of nICP (2.5 nICP at $20 each) into the treasury and burn $50 of the borrower's icUSD debt.
    - **Non-Borrower-Tied icUSD**: The icUSD created through debt burn is tracked separately as "non-borrower-tied icUSD" and remains fully backed by treasury-held collateral. This icUSD is eligible for redemption directly through treasury reserves.

4. **Dynamic Stability Fee Adjustments**:

    - If redemption demand for non-borrower-tied icUSD increases significantly, the protocol dynamically adjusts stability fees to encourage borrowing and increase the supply of icUSD.
    - In low-supply scenarios:
        - Borrowing costs (stability fees) are reduced to incentivize minting more icUSD.
        - Governance may offer additional rewards, such as RUMI tokens, to borrowers.
    - This dynamic mechanism balances supply and demand, ensuring icUSD remains pegged to $1.

5. **Redemption and Liquidation**:

    - Once the loan is fully repaid, any remaining collateral is returned to the borrower.
    - If the collateral's value decreases significantly, standard liquidation mechanisms are employed to protect the protocol, ensuring that icUSD remains over-collateralized.

Example Use Case

- A user deposits 100 nICP, redeemable for 1 ICP each, as collateral. At $20 per ICP, the total collateral value is $2,000. The user mints 1,000 icUSD, maintaining an LTV of 50%.
- Over six months, the nICP redemption rate increases to 1.1 ICP, raising the collateral value to $2,200.
- The protocol absorbs $50 worth of nICP (2.5 nICP at $20 each) into the treasury and burns $50 from the user's icUSD debt, reducing their outstanding balance to 950 icUSD.
- The remaining $1,950 worth of collateral continues to back the user's loan.

Future Expansion

As the ICP ecosystem evolves, new yield-bearing assets are expected to emerge. Rumi Protocol will incorporate these assets into its self-repaying loan system, enabling users to unlock liquidity while benefiting from a broader range of staking derivatives. Additionally, the protocol's dashboard will display metrics for borrower-tied and non-borrower-tied icUSD to ensure full transparency.

Benefits of Self-Repaying Loans

- **For Users**:
    - **Liquidity Without Sacrificing Growth**: Borrowers retain exposure to their collateral's appreciation while accessing immediate liquidity.
    - **Simplified Loan Management**: Automatic debt repayment reduces the risk of liquidation and makes loan maintenance effortless.
    - **Enhanced Efficiency**: Collateral yields are put to productive use, reducing debt passively over time.

- **For the Protocol**:
    - **Strengthened Treasury**: Absorbing nICP into the treasury builds long-term reserves, contributing to systemic stability.
    - **Controlled icUSD Circulation**: By burning icUSD from outstanding debt, the protocol maintains its over-collateralization and enhances icUSD's stability.
    - **Dynamic Demand Management**: Adjusting stability fees ensures icUSD supply remains balanced, supporting the peg.
    - **User Incentive Alignment**: The self-repaying loan mechanism promotes responsible borrowing while attracting yield-focused users to the protocol.

Borrower Obligations

To maintain the integrity of the system, borrowers are responsible for monitoring and managing their collateralized debt positions (CDPs):

Monitoring Tools:

- The protocol provides real-time data on collateral ratios and alerts users when their positions approach the 150% LR.
- Borrowers can monitor their collateral value, debt balance, and overall risk level through the dashboard.

Liquidation Ratio (LR):

- For the MVP, the Rumi Protocol enforces a strict 150% LR across all collateral types. Borrowers must ensure their positions remain above this threshold to avoid liquidation.
- Future Governance: Over time, governance may introduce collateral-specific LRs to reflect varying levels of risk for different assets (e.g., higher LR for volatile assets, lower LR for stable assets).
- Dynamic Adjustments: Governance may also enable dynamic LRs that adjust automatically based on market volatility or systemic conditions, ensuring the protocol remains resilient during extreme events.

Maintenance Ratio (MR):

- Borrowers are encouraged to maintain their positions well above the 150% LR to avoid liquidation.
- Suggested buffer: A collateralization ratio of 200% or more offers greater protection during periods of high market volatility.

Top-Up Features:

- Borrowers can easily add more collateral to their positions to prevent liquidation during adverse market conditions.
- The protocol provides alerts and tools to facilitate collateral top-ups.

Accrual Model for Stability Fees:

- Stability fees are added to the user's debt balance. If icUSD balances are insufficient to cover fees, they are deducted from the user's collateral as a fallback mechanism.

Summary

The mechanics of the Rumi Protocol are designed to ensure stability, transparency, and user empowerment. For the MVP, the protocol enforces a strict 150% Liquidation Ratio, applying uniform risk management across all collateral types. Future iterations, guided by governance, may implement collateral-specific and dynamic LRs to reflect market conditions and asset volatility.

By introducing isolated collateral pools, dynamically adjusting risk parameters, and implementing innovative mechanisms like temporary debt minting and alternative loan repayment options, the protocol provides a robust framework for icUSD's stability and scalability. Borrowers, liquidity providers, and governance participants work together to maintain a resilient and user-friendly system.

Chapter 6: Stability Mechanisms

The Philosophy of Stability

Stability is the cornerstone of any successful stablecoin, and icUSD is no exception. The Rumi Protocol is built on a foundation of over-collateralization, dynamic adjustments, and decentralized governance to maintain icUSD's peg to the US dollar. Unlike fiat-backed stablecoins, which rely on centralized reserves, or algorithmic stablecoins, which often fail during market stress, icUSD combines the best elements of transparency, decentralization, and robustness.

Why Stability Matters

- **Trust in DeFi**: Users need assurance that their stablecoin will retain its value, even during market volatility.
- **Ecosystem Growth**: A stable and reliable asset attracts developers, liquidity providers, and users to the Internet Computer ecosystem.
- **Broader Use Cases**: From payments to savings and beyond, icUSD's stability enables it to function effectively across various applications.

Mechanisms for Maintaining the Peg

The Rumi Protocol employs a multi-layered approach to ensure icUSD maintains its 1:1 peg to the US dollar. While Chapter 5 delves into the operational details of these mechanisms, this section highlights how they collectively defend stability.

Over-Collateralization

- icUSD is always backed by collateral worth more than the total supply of icUSD. This ensures that even during extreme market downturns, the protocol remains solvent and users' assets are protected.
- Each collateral type operates in an isolated collateral pool, ensuring risk is compartmentalized and managed appropriately.
- For icUSD no longer tied to specific borrowers, the treasury ensures full backing through assets absorbed via mechanisms like self-repaying loans.

Liquidation Mechanisms

- **Dynamic Risk Management**: Liquidation Ratios (LRs) are adjusted dynamically based on market conditions to prevent cascading failures. For the MVP, a fixed 150% LR will apply to all collateral types, with dynamic and collateral-specific LRs introduced in future iterations.
- **Temporary Debt Minting**: During icUSD shortages in liquidation events, the protocol mints temporary icUSD, which is burned post-liquidation to maintain the peg without diluting value.

Redemption Margin Ratios (RMR)
RMR governs the value of collateral users receive when redeeming icUSD and is adjusted dynamically to maintain system stability:

1. Overcollateralized State (>250%):

- RMR is set to **99%-100%**, discouraging redemptions and encouraging users to hold or spend icUSD within the ecosystem.
- Stability fees may also be reduced to incentivize borrowers to mint more icUSD, increasing supply to support the peg.

2. Undercollateralized State (<150%):

- RMR is increased to **101%-105%**, strongly encouraging users to redeem icUSD for collateral.
- This reduces the circulating supply of icUSD and restores balance by removing excess debt.

Protocol-Owned Liquidity (POL)

- The protocol maintains reserves of icUSD and collateral in liquidity pools to stabilize key trading pairs (e.g., icUSD/USDT).
- Treasury reserves, including absorbed assets such as nICP, strengthen POL by providing liquidity for redemptions and supporting market stability.

Stability Pool

- The Stability Pool acts as the first line of defense, absorbing icUSD from liquidated positions and distributing collateral to participants.
- This incentivized pool ensures sufficient liquidity is always available for liquidations.

Governance-Driven Stability

Decentralized governance lies at the heart of the Rumi Protocol's stability framework. By empowering RUMI token holders to make critical decisions, the protocol remains adaptive and transparent.

Key Governance Responsibilities

1. **Adjusting Parameters**:
    - Governance can modify LRs, RMRs, and fee structures to address changing market conditions.
2. **Emergency Measures**:
    - Governance can vote to halt claims, adjust fees, or implement temporary restrictions during extreme market events.
3. **Treasury Management**:
    - Decisions on treasury allocations (e.g., Stability Pool rewards, POL funding) ensure the protocol's long-term solvency and growth.
4. **Transparency and Participation**:
    - All governance proposals and votes occur on-chain, ensuring transparency and accountability.
    - Active participation is incentivized through staking rewards, reduced fees, and enhanced voting power for RUMI holders.

Future Enhancements to Stability

As the protocol evolves, the following enhancements are planned to further solidify icUSD's stability:

1. **Diversification of Collateral**:
    - Onboarding additional collateral types, including tokenized real-world assets (RWAs), to reduce reliance on specific asset classes.
2. **Cross-Chain Expansion**:
    - Integrating icUSD and RUMI with other blockchains to increase liquidity and expand the user base.
3. **Advanced Algorithms**:
    - Developing predictive models to proactively adjust stability parameters based on market trends.
4. **Strategic Partnerships**:
    - Collaborating with other DeFi protocols to create cross-stablecoin stability solutions and broaden use cases.

Summary

The stability of icUSD is not a single mechanism but a carefully orchestrated system combining over-collateralization, dynamic adjustments, incentivized participation, and governance oversight. By aligning the interests of users, liquidity providers, and governance participants, the Rumi Protocol ensures that icUSD remains a trusted and stable asset within the DeFi ecosystem. With a forward-looking approach and a commitment to innovation, the protocol is poised to adapt and thrive in an ever-changing market landscape.

Chapter 7: Treasury Allocation

The Role of the Treasury

The treasury is the financial backbone of the Rumi Protocol, ensuring that the system remains solvent, incentivized, and capable of long-term growth. By strategically allocating revenue and reserves, the treasury supports key areas such as protocol stability, user rewards, ecosystem development, and governance operations.

Treasury Breakdown

The treasury is divided into five primary categories, each with a clear purpose and allocation percentage:

Stability Mechanisms (50%)

Ensures the system remains solvent and stable during normal operations and adverse market conditions.

- **Liquidations (30%)**: Covers the costs associated with collateral liquidation events, ensuring seamless debt resolution.
- **Bonds (10%)**: Allocates funds to strengthen protocol solvency during extreme market volatility or systemic risk events.
- **Redemptions (10%)**: Provides liquidity for redemptions and maintains the peg of icUSD to the US dollar.

Incentive Programs (25%)

Encourages user participation in the protocol through rewards and liquidity incentives.

- **Stability Pool Rewards (15%)**: Rewards Stability Pool participants for absorbing liquidated debt, ensuring the system's solvency.
- **Liquidity Provision (10%)**: Incentivizes users to provide liquidity for RUMI/icUSD pairs, bolstering trading volume and stability.

Governance & Operations (15%)

Supports the protocol's decentralized governance and operational expenses.

- **RUMI Neuron Rewards (10%)**: Encourages active governance participation by rewarding RUMI stakers.
- **Protocol Operations (5%)**: Covers essential operational costs, including development, maintenance, and audits.

Reserve Fund (10%)

Acts as a financial buffer for unforeseen events or systemic risks.

- Ensures the protocol can respond effectively to emergencies without disrupting normal operations.

Ecosystem Growth (5%)

Fosters innovation and adoption by funding strategic partnerships, integrations, and grants.

- Provides resources to projects that integrate with Rumi Protocol, expanding its utility and reach.

Treasury Allocation Adjustments

To enhance the protocol's resilience and operational flexibility, additional allocations have been incorporated into the treasury structure:

- **Funding for Isolated Collateral Pools**: A portion of the treasury is allocated to the establishment, monitoring, and management of isolated collateral pools. This ensures that each collateral type has sufficient resources to operate independently, mitigating systemic risks.

- **Enhanced Liquidation Mechanisms**: Dedicated funding is reserved to support advanced liquidation processes, including dynamic collateral discount adjustments and the Temporary Debt Minting Mechanism. These enhancements ensure smooth liquidation events and robust system stability.

- **Emergency Buffers**: A specific allocation within the Reserve Fund is designated as an emergency buffer. This buffer can be deployed during extreme market events to stabilize key trading pairs, provide liquidity for critical functions, or implement governance-approved emergency measures.

Revenue Streams

The treasury is funded through various revenue streams, all designed to align protocol sustainability with user participation:

- **Minting Fees**: A small percentage fee charged for minting icUSD contributes to the treasury's growth.
- **Redemption Fees**: Fees collected when users redeem icUSD for collateral assets.
- **Liquidation Fees**: A portion of the seized collateral from liquidations is allocated to the treasury.
- **Protocol Revenue**: Includes income from partnerships, integrations, and any external investments.

Fee-Buyback and Burn

To support the value of the RUMI token, a portion of treasury revenue is used for fee-buyback and burn initiatives:

- **Market Purchases**: Revenue is used to purchase RUMI tokens on the open market.
- **Token Burn**: Purchased RUMI tokens are permanently removed from circulation, reducing supply and creating upward price pressure.

This mechanism aligns protocol success with token holder benefits, fostering a healthy token economy.

Reserve Fund for Systemic Risk

The Reserve Fund is a dedicated allocation within the treasury designed to handle unexpected events:

- **Emergency Deployments**: Funds can be deployed quickly to stabilize the system during extreme market volatility or unforeseen crises.
- **Governance Oversight**: Reserve Fund allocations require community approval to ensure transparency and alignment with the protocol's goals.

Ecosystem Growth Initiatives

A thriving ecosystem is essential for long-term success. The treasury dedicates 5% of its funds to initiatives that drive adoption and innovation:

- **Grants**: Funding for developers building tools and applications that integrate with Rumi Protocol.
- **Partnerships**: Resources for collaborations that expand icUSD's use cases and improve liquidity.
- **Integrations**: Support for integrating icUSD into other DeFi protocols, enhancing its utility and accessibility.

Governance and Treasury Management

RUMI token holders play an active role in treasury management through governance:

- **Proposal System**: Community members can submit proposals for reallocation of treasury funds, new initiatives, or changes to existing programs.
- **Voting**: All treasury-related decisions are subject to decentralized voting by RUMI holders.
- **Transparency**: Treasury balances and allocations are publicly visible on-chain, ensuring accountability.

Long-Term Financial Sustainability

The treasury model is designed for long-term growth and sustainability:

- **Adaptive Allocations**: Governance can adjust allocation percentages over time to adapt to new challenges and opportunities.
- **Balanced Spending**: Ensures that funds are used efficiently, prioritizing stability, growth, and user incentives.
- **Reinvestment**: Revenue generated by the protocol is reinvested into the treasury, creating a self-sustaining cycle of growth and innovation.

Summary

The Rumi Protocol treasury is a carefully balanced system that underpins the protocol's stability, incentivizes participation, and drives ecosystem growth. By allocating resources strategically and empowering the community through governance, the treasury ensures the long-term viability and adaptability of the protocol.

Chapter 8: Incentives and Revenue Models

Incentivizing User Participation

Incentives are at the heart of Rumi Protocol’s design, fostering active participation, liquidity provisioning, and governance involvement. The incentive mechanisms align user contributions with protocol sustainability, ensuring a vibrant and engaged ecosystem.

Stability Pool Rewards

The Stability Pool plays a critical role in maintaining the protocol’s solvency during liquidation events. To encourage user participation in the pool, the protocol offers attractive rewards:

RUMI Token Rewards:

- Stability Pool participants earn RUMI tokens proportional to their contributions.
- This creates a direct incentive for users to support the system's stability.

Collateral Rewards:

- When liquidations occur, the collateral seized is distributed to Stability Pool participants, providing additional rewards beyond RUMI tokens.

Dynamic Allocation:

- The protocol periodically adjusts Stability Pool rewards to ensure they remain competitive and aligned with market conditions.

Liquidity Provision Incentives

To bootstrap liquidity and enhance trading efficiency, the protocol incentivizes the creation of liquidity pools for icUSD and RUMI on decentralized exchanges.

Liquidity Mining Programs:

- Users providing liquidity to RUMI/icUSD and other trading pairs earn rewards in RUMI tokens.
- Early participants in liquidity mining programs may receive higher rewards to encourage initial adoption.

Fee Discounts for Liquidity Providers:

- Liquidity providers enjoy reduced transaction fees within the protocol, enhancing their net returns.

Protocol Revenue Sharing:

- A portion of the protocol's revenue is redirected to liquidity providers to sustain long-term engagement.

Minting Incentives During icUSD Shortages

The protocol introduces specific incentives during periods of icUSD shortages to encourage user participation and stabilize liquidity:

- **Discounted Collateral Access**: Users minting icUSD during periods of low liquidity may receive higher discounts on required collateral ratios, incentivizing rapid minting.

- **Fee Reductions**: Minting and stability fees are temporarily reduced or waived to attract more participants to mint icUSD.
- **Increased Loan-to-Value (LTV) Ratios**: During shortages, the protocol may allow higher LTV ratios for collateral, enabling users to mint more icUSD while maintaining system solvency.

These temporary incentives ensure the system's liquidity needs are met without compromising long-term stability.

Governance Incentives

Governance participation is a cornerstone of Rumi Protocol, and incentives are designed to encourage meaningful involvement:

RUMI Neuron Rewards:

- RUMI holders who stake their tokens to create RUMI Neurons earn governance rewards.
- Rewards are proportional to the staked amount and the duration of the lock-up period.

Priority Voting Rights:

- Active governance participants gain enhanced voting power and access to exclusive governance proposals.

Non-Monetary Benefits:

- Governance stakers receive benefits such as reduced fees, higher collateralization limits, and early access to new features.

Dynamic icUSD Savings Rate (ISR):

- The ISR is recalculated dynamically based on the previous 24 hours of stability fee collections.
- A real-time dashboard displays APR and earnings updates, ensuring transparency and user engagement.
- Governance retains control over setting APR caps and adjusting the allocation of stability fees.

RUMI Token Incentives

The RUMI token drives user engagement and rewards participants who contribute to the protocol's success:

- **Minting Incentives**: Users who mint icUSD during critical periods earn additional RUMI rewards, promoting stability and active participation.
- **Stability Pool Rewards**: RUMI is distributed as a reward to users who deposit icUSD into the Stability Pool, reinforcing system solvency.
- **Liquidity Mining Programs**: RUMI tokens incentivize users to provide liquidity to key trading pairs, such as RUMI/icUSD and icUSD/USDT, ensuring deep liquidity across the ecosystem.

Revenue Models

Rumi Protocol generates sustainable revenue through several key mechanisms, ensuring a self-sufficient and growth-oriented ecosystem:

Minting Fees:

- A small percentage fee is charged when users mint icUSD.
- This fee provides consistent revenue for the treasury while disincentivizing excessive leverage.

Redemption Fees:

- Fees are collected when users redeem icUSD for their collateral, contributing to protocol revenue.
- Redemption fees are dynamic and may decrease during under-collateralized states to incentivize system recovery.

Liquidation Fees:

- When a user's position is liquidated, a portion of the collateral is allocated as a fee to the treasury.
- Liquidation fees ensure the protocol remains solvent and incentivizes users to maintain healthy collateralization levels.

Stability Pool Fees:

- Users participating in the Stability Pool pay small fees, which are directed to the treasury to sustain operations.

Fee Buyback and Burn Mechanism

The fee-buyback and burn mechanism is a central feature of RUMI's tokenomics, aligning protocol growth with token holder benefits:

Market Purchases:

- A portion of protocol revenue is used to buy RUMI tokens on the open market.

Token Burn:

- Purchased tokens are permanently removed from circulation, reducing the total supply of RUMI.

Benefits:

- Creates upward price pressure on RUMI.
- Rewards token holders indirectly through value appreciation.
- Ensures a deflationary model that benefits long-term stakeholders.

Discount and Access Model

RUMI token holders and stakers enjoy unique benefits that go beyond direct rewards:

Fee Discounts:

- Reduced minting, redemption, and transaction fees for RUMI stakers.

Enhanced Collateralization:

- Stakers gain access to higher Loan-to-Value (LTV) ratios, improving capital efficiency.

Early Feature Access:

- Governance participants can test and use new protocol features before they are rolled out to the broader community.

Balancing Incentives and Sustainability

The protocol is designed to balance short-term rewards with long-term sustainability:

Dynamic Adjustments:

- Incentive levels are periodically reviewed and adjusted based on governance decisions and market conditions.
- Ensures that rewards remain competitive without depleting the treasury.

Revenue Reinvestment:

- Revenue generated by fees and operations is reinvested into the treasury to fund incentives, development, and stability mechanisms.

Treasury Oversight:

- Governance actively monitors treasury allocations to ensure funds are used efficiently and align with the protocol's goals.

Summary

Rumi Protocol's incentive and revenue models are intricately designed to foster user participation, maintain system stability, and ensure long-term sustainability. By aligning user interests with the protocol's success, Rumi Protocol creates a thriving ecosystem that rewards active contributors and supports its broader vision for decentralized finance.

Chapter 9: Use Cases and Vision

Use Cases for icUSD and RUMI

Rumi Protocol is designed to serve a diverse range of use cases within the decentralized finance (DeFi) ecosystem, providing value to users across various financial activities.

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icUSD Use Cases

icUSD, as a decentralized, collateral-backed stablecoin, addresses critical needs for stability and utility in DeFi:

1. **Lending and Borrowing**:
    - icUSD enables users to lock assets and access liquidity without selling their holdings.
    - Borrowers can manage debt positions efficiently while lenders benefit from stable interest payments.
2. **Yield Farming and Liquidity Provision**:
    - icUSD can be deposited into liquidity pools, generating yield through trading fees and rewards.
    - As a stable asset, it mitigates exposure to market volatility, making it an attractive option for yield farming.
3. **Store of Value**:
    - icUSD provides a stable haven during periods of cryptocurrency volatility.
    - Users can hold icUSD to preserve value or hedge against downturns in the broader market.
4. **Payment Solutions**:

    - With its stability and decentralized nature, icUSD is well-suited for peer-to-peer payments and cross-border transactions.
    - Businesses can use icUSD to settle transactions without exposure to fiat or crypto volatility.
5. **Collateral in Other Protocols**:
    - icUSD can be integrated into other DeFi platforms as a trusted stablecoin, enabling advanced financial instruments like synthetic assets and derivative trading.

RUMI Use Cases

RUMI, as the governance token of the protocol, empowers users to participate in decision-making and benefits them through unique utility:

1. **Governance Participation**:
    - RUMI holders can propose and vote on protocol changes, treasury allocations, and ecosystem initiatives.
    - Active governance creates a decentralized and transparent system.
2. **Incentives and Rewards**:
    - Staking RUMI in governance neurons yields rewards, both in the form of RUMI tokens and non-monetary benefits.
    - Stakers also gain fee discounts and enhanced collateralization options.
3. **Liquidity Provision**:
    - RUMI incentivizes users to provide liquidity to trading pairs like RUMI/icUSD, bolstering market efficiency and trading volume.
4. **Fee Discounts and Premium Access**:
    - RUMI stakers enjoy reduced fees across the protocol and early access to new features and integrations.

Vision for Rumi Protocol

Rumi Protocol is built with a long-term vision of becoming a foundational layer for decentralized financial systems. Its key objectives include:

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1. Widespread Adoption of icUSD

- **ICP Ecosystem Integration**: As a stablecoin designed for the Internet Computer Protocol, icUSD aims to be the go-to stablecoin for dApps and DeFi platforms within the ICP ecosystem.

- **Cross-Chain Compatibility**: Future upgrades will enable seamless use of icUSD across other blockchains, expanding its utility and user base.
- **Real-World Use Cases**: Partnerships with traditional businesses and payment platforms will drive adoption of icUSD for everyday transactions.

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2. Expanding the Governance Ecosystem

- **Decentralized Leadership**: Governance will gradually transition to a fully decentralized model, empowering the community to shape the protocol's future.
- **Collaborative Growth**: Treasury funds will support partnerships, grants, and integrations that align with the protocol's goals.

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3. Building a Sustainable Token Economy

- **RUMI Value Growth**: The fee-buyback and burn mechanism, combined with active governance participation, ensures a sustainable and appreciating token economy.
- **Incentive Alignment**: The tokenomics model incentivizes both short-term and long-term participation, creating a balanced and thriving ecosystem.

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4. Enhancing Stability and Risk Management

- **Dynamic Risk Adjustments**: Continued refinement of stability mechanisms like Liquidation Ratios (LR) and Redemption Margin Ratios (RMR) will enhance resilience to market volatility.
- **Broader Collateral Options**: Diversifying collateral types will reduce reliance on individual assets and improve system robustness.

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5. Driving DeFi Innovation

- **New Financial Instruments**: icUSD will serve as the foundation for advanced DeFi tools, such as synthetic assets, options, and insurance products.
- **Ecosystem Partnerships**: Collaborations with other DeFi protocols will expand the use cases for icUSD and RUMI, enhancing their value proposition.

Bridging Decentralized and Traditional Finance

Rumi Protocol envisions a future where decentralized finance (DeFi) and traditional finance (TradFi) coexist seamlessly. By leveraging the unique capabilities of the Internet Computer Protocol and maintaining a user-focused approach, Rumi Protocol aims to become a trusted bridge between these two worlds.

Summary

Rumi Protocol's use cases and vision position it as a transformative force in the DeFi ecosystem. By offering icUSD as a stable, versatile asset and empowering users through RUMI governance, the protocol paves the way for widespread adoption and long-term sustainability. Through innovation, collaboration, and a commitment to stability, Rumi Protocol is set to redefine the future of decentralized finance.

Chapter 10: Conclusion and Roadmap

Conclusion

The Rumi Protocol represents a transformative step in decentralized finance, offering a stable and transparent foundation for the DeFi ecosystem. Through **icUSD**, a robust, collateral-backed stablecoin, and **RUMI**, a dynamic governance token, the protocol combines innovative stability mechanisms with decentralized decision-making to address the core challenges facing stablecoins today.

By leveraging the scalability and security of the Internet Computer Protocol (ICP), Rumi Protocol ensures low-cost, high-performance operations, setting new standards for stablecoin reliability and utility. The protocol's commitment to over-collateralization, dynamic risk management, and transparent governance establishes a sustainable framework for growth and adoption.

Through active community participation, incentivized engagement, and partnerships within and beyond the ICP ecosystem, Rumi Protocol is positioned to drive DeFi innovation and adoption globally. Its emphasis on trust, decentralization, and adaptability lays the foundation for a thriving and inclusive financial future.

Roadmap

To achieve its ambitious vision, Rumi Protocol has outlined a phased roadmap that balances foundational development with strategic growth initiatives:

Phase 1: Foundation and Launch

- **Collateral and Minting Mechanism**: Launch icUSD with support for ICP, ckBTC, and ckETH as collateral assets.
- **Stability Mechanisms**: Implement initial liquidation and redemption mechanisms, including baseline Liquidation Ratios (LR) and Redemption Margin Ratios (RMR).
- **Stability Pool**: Deploy the Stability Pool with incentivized participation through RUMI rewards.

Timeline: Q1–Q2, 2025

Phase 2: Ecosystem Integration

- **Ecosystem Partnerships**: Establish integrations with dApps and DeFi platforms within the ICP ecosystem.
- **Liquidity Incentives**: Launch liquidity mining programs for RUMI/icUSD and other trading pairs on decentralized exchanges.
- **Dynamic Risk Management**: Introduce automated adjustments to LR and RMR based on real-time market data via HTTPS outcalls.
- **User Tools**: Develop dashboards for real-time monitoring of collateral positions, Stability Pool participation, and governance activities.

Timeline: Q3–Q4, 2025

Phase 3: Cross-Chain Expansion

- **Interoperability**: Enable icUSD and RUMI to function seamlessly on major blockchains beyond ICP.
- **Broader Collateral Support**: Expand collateral options to include additional assets such as tokenized real-world assets (RWAs) and other stablecoins.
- **Global Adoption**: Launch targeted initiatives to promote icUSD as a cross-border payment solution, bridging DeFi and traditional finance.

Timeline: 2026

Phase 4: Advanced Financial Instruments

- **Synthetic Assets**: Build icUSD-backed synthetic assets, enabling exposure to traditional assets, commodities, and indices.

- **Options and Derivatives**: Introduce icUSD-based derivatives markets, expanding use cases and trading opportunities.
- **Insurance Protocols**: Develop insurance products for icUSD holders and liquidity providers, mitigating risks associated with extreme market conditions.

Timeline: 2027

Phase 5: Full Decentralization

- **Governance Evolution**: Transition governance to a fully decentralized model, with RUMI holders taking full control of protocol operations.
- **Self-Sustaining Ecosystem**: Optimize treasury management to ensure the protocol's financial sustainability and ability to fund future initiatives.
- **End-to-End User Experience**: Enhance the protocol with tools and resources that simplify onboarding, participation, and management for users of all experience levels.

Timeline: 2028 and Beyond

The Future of Rumi Protocol

Rumi Protocol’s long-term goal is to become a trusted, indispensable infrastructure layer for decentralized finance. By addressing the challenges of stablecoin reliability, scalability, and governance, the protocol aims to empower users across the globe and create a sustainable financial ecosystem that bridges the gap between blockchain and traditional finance.

Through innovation, collaboration, and a relentless focus on user-centric solutions, Rumi Protocol is poised to lead the next era of decentralized finance, transforming how people interact with money and technology.

Below is an appendix consolidating key mathematical relationships and parameters referenced or implied throughout the Rumi Whitepaper. These formulas help clarify how core metrics (such as collateral requirements, Liquidation Ratios, and Redemption Margin Ratios) are calculated and interact within the protocol.

Appendix: Relevant Formulas

1. Loan-to-Value (LTV) and Liquidation Ratio (LR)

Loan-to-Value (LTV):
LTV represents the ratio of a user’s debt (in icUSD) to the USD value of their collateral.

$$\text{LTV} = \frac{\text{Debt (in iUSD)}}{\text{Collateral Value (in USD)}} \times 100\%$$

Liquidation Ratio (LR):
LR is the inverse measure of how much collateral (in USD) must back a given amount of icUSD debt. The baseline LR for Rumi Protocol is 150%.

$$\text{LR} = \frac{\text{Collateral Value (in USD)}}{\text{Debt (in iUSD)}} \times 100\%$$

Relationship Between LTV and LR:

$$\text{LTV} = \frac{100\%}{\text{LR}}$$

For LR = 150%, LTV ≈ 66.67%.

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2. Maximum icUSD Minting Given Collateral

Given LR = 150%, the maximum icUSD (D) you can mint from collateral (C) is:

$$D = \frac{C}{\text{LR}/100\%} = \frac{C}{1.5}$$

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3. Redemption Margin Ratio (RMR)

RMR determines how much collateral you receive per icUSD redeemed.

$$\text{Collateral Received per iUSD Redeemed} = \text{RMR} \times 1 \text{ USD}$$

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4. Collateral Requirements for Borrowers

To maintain at least 150% LR, the required collateral C for a given debt D is:

$$C \geq D \times 1.5$$

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5. Fee-Buyback and Burn Mechanism

If p is the fraction of fees (F) allocated to buybacks and P_{RUMI} is the RUMI price in USD:

$$\text{RUMI Purchased} = \frac{p \times F}{P_{\text{RUMI}}}$$

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6. Dynamic Adjustments

LR and RMR are functions of market conditions $M(t)$:

$$\text{LR}(t) = f(M(t)), \quad \text{RMR}(t) = g(M(t))$$

Notes:

- Variables like RMR and fee allocations are determined by governance and can change over time.
- These formulas serve as a base reference for the Rumi Protocol’s economic and risk management framework.