



DECREDIT

—— A Credit Empowered DeFi 2.0 Protocol

**At DeCredit, ever-growing DeFi powers are employed to support more
available funds for individuals and entities.**

DeCredit is committed to leading the DeFi protocol 2.0 market. DeCredit extends the crypto-collateralised lending model with a credit-based lending model, aiming to introduce off-chain credit ratings to the DeCredit platform using credit authentication nodes and Oracle machines to provide differentiated lending limits and interest rates based on on-chain and off-chain credit assessments, bringing more lending markets into the market.

1. The Challenges

With the rapid development of DEFI, credit products and credit models in the blockchain world are gaining momentum.

At the beginning of blockchain time, people wanted to leverage the peer-to-peer, decentralised nature of blockchain and use peer-to-peer matching to facilitate the disintermediation of borrowers and lenders. In this model, borrowers and lenders put their lending needs on the chain and smart contract algorithms automatically match up borrowers and lenders. However, as blockchain lending is in its early stages, it is difficult to achieve peer-to-peer matching and thus causing the unsatisfactory user experience.

Aave, Makerdao and Compound has changed the situation by shifting the peer-to-peer aggregation model into one where lending is traded through liquid pools. The process is automatedly executed and the threshold is low. This lending market attracts large amounts of capital by offering higher interest rates than traditional financial markets, and their gains can be further expanded by locked mining.

However, the overcollateralisation model also has many problems, including but not limited to: risks such as liquidation due to fluctuations in collateral value; limited capital utilisation due to reliance on overcollateralisation in lieu of credit guarantees; and in loan market, the collateral lending only accounts for 30% and the majority of lending needs cannot be met, such as consumption loans and credit facilities.

2. Opportunity

DeFi 2.0 becomes the buzzword together with the credit loan models as a way of addressing the current dilemma of a lending market that relies solely on overcollateralisation. Actually, the market has seen some pilots from AAVE, Goldfinch and Teller.

In late 2020, AAVE launched Flash Loan, Credit Delegation, proposing a solution for unsecured lending in specific scenarios. However, due to the lack of off-chain credit information introduced, its credit loan scale is very limited. Flash Loan is only used by crypto finance developers; as of the end of that year, Credit Delegation was few authorized to validate the loan amount in DeversiFi.

In early 2021, Michael Sall, a former product developer from Coinbase, created the Goldfinch project, proposing an unsecured credit crypto lending solution for real-world , which received lead funding from Coinbase venture.

The DeFi 2.0 time comes.

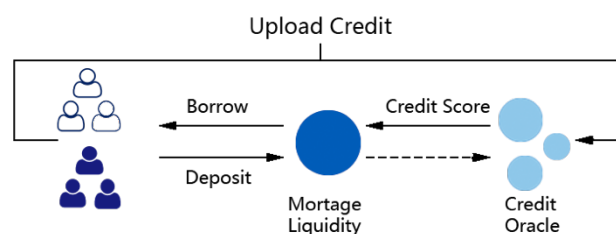
DeCredit is committed to bringing off-chain credit to the blockchain, thereby expanding the large-scale application of DEFI lending. The DeCredit team is deeply involved in the credit sector and has rich industry resources in the field of credit protocols, big data credit, industrial funds and data risk control, which can provide rich lending scenarios and credit base support for DeCredit to expand its credit lending business.

We believe that as cryptocurrencies become more popular, more and more projects will join the building of a trusted lending financial ecosystem, a new

opportunity for decentralised credit protocols.

3. What is DeCredit?

DeCredit is a DeFi 2.0 protocol that empowers the DeFi market by introducing the credit loan models, that is, linking credit authentication nodes and Oracle credit machine to lending products, on the premise of existing encrypted collateralised loan models, with a view to progressively reduce and finally eliminate collaterals, enabling staggered resource allocation and enabling the blockchain paradigm to inclusively enable the traditional financial lending sector. By doing this, DeCredit leverages the tremendous momentum generated by DEFI to provide liquidity support to a wider range of entities and individuals.



DeCredit Scoring System (DSC)

The DeCredit Scoring System is a system for quantitatively assessing individual credit risk, based on the Credit-Scoring algorithm and the Credit-Matching algorithm to quantify and calculate the credit score that reflects an individual's creditworthiness, thus providing DeCredit with a basis for loan allocation, analysis, evaluation and optimisation.

For a given individual, the D credit rating score is based on a percentage scale

ranging from 0 to 100, with 0 being the lowest rating and 100 being the highest.

Initially we have set three levels, L0, L1 and L2.

DeCredit Scoring System (3 levels)

L0: Scored $P < 75$ (inclusive)

L1: Scored between 75 and 89

L2: Scored 89 and above (inclusive)

```
func (*UserSimpleReportService) TotalPointQualification (p float64) string {  
    var status string  
    if p <= 75 {  
        status = "L0"  
    }else if p > 75 && p < 89 {  
        status = "L1"  
    }else {  
        status = "L2"  
    }  
    return status  
}
```

If Bob is a L2 user, he will be judged as the premium user, and his collateral ratio will reach 70% in the first phase of the DeCredit product, that means, if Bob's credit line is 1000 USDT, he will only need to stake 700 USDT.

The different levels of credit ratings mean different loan amounts and APY available. As the cryptoasset lending scale on the DeCredit ecosystem continues to grow and mature, the tiers of the DeCredit credit rating system will be further expanded from the current 3-level rating system to a 10-level rating system.

DeCredit Loan Scenarios

DeCredit supports both collateral loan and credit loan models.

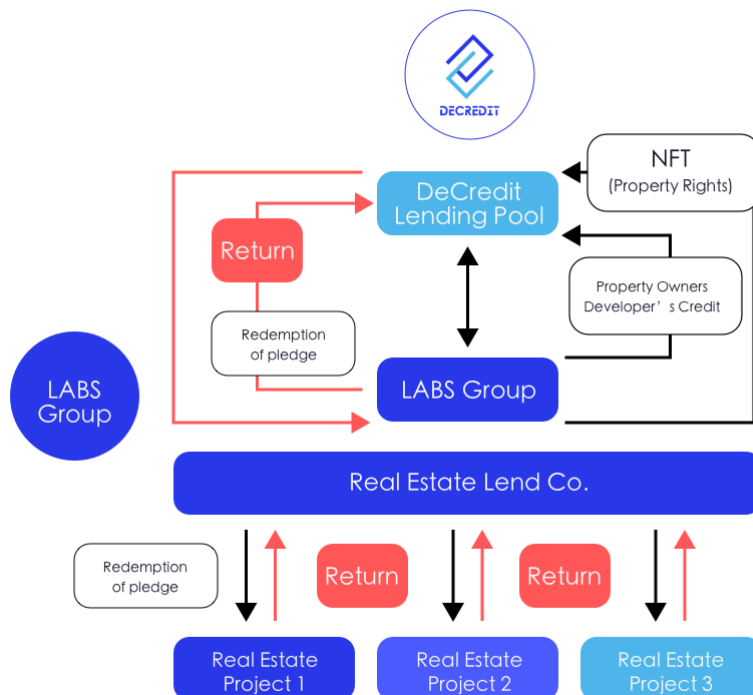
The collateral loan model is suitable for scenarios such as crypto leverage and its protocol is somewhat like AAVE, where depositors provide liquidity and earn interest income by depositing cryptocurrencies into a liquidity pool; meanwhile, in the same liquidity pool, lenders can borrow cryptocurrencies by injecting Staking and paying some interest fees. The risk management of the staking lending model includes Loan-To-Value (LTV), H(f) health factors and liquidation mechanism. Last but not least, DeCredit risk management mechanism is all driven by decentralised algorithms.

The credit loan model is applicable to a wider range of loan scenarios, such as project-specific funding loan, credit consumption loan, etc. The protocol is based on a liquidity pool, which is dedicated to decentralised credit assessment relying on user profiles provided by trusted institutions, combined with peer-to-peer aggregation and liquidity pool management for intelligent matching to facilitate risk control and liquidity matching for credit loans.

DeCredit L0 (i.e. score $P < 75$) users can only borrow money on a secured basis and credit is available for L2 (i.e. score ≥ 89), with more loan scenarios becoming available as crypto loan scale grows in scale.

Credit loan scenarios include (but are not limited to)

- End-user specific loan (subject to credit line)



DeCredit introduces NFT into this real estate RWA. Trusted Group is a credible organization with real estate management and financing credit resources, such as real estate credit companies, real estate financing companies. DeCredit provides stable pools to cooperate with these trusted groups.

Trusted groups mint the property rights or titles of its housing assets to NFTs and deposit them into DeCredit's pledge pool. Meanwhile the credit data of the asset holder is sent to DeCredit oracle for rating, benefitting the lending from DeCredit' s borrowing pool with optimized liquidity. The trusted groups then converts the borrowed funds into fiat money and give it to LendCo. LendCo allocates funds to different real estate projects. When the investment cycle ends, trusted groups returns funds back to DeCredit and redeems the collaterals.

The introduction of Off-chain credit investigation

In the first phase of DeCredit, DeCredit will fuse the traditional credit institutions and blockchain DAO governance in the hopes of selecting some trusted third-party credit investigation entities and blacklist database institutions. These selected institutions will be incorporated into credit authentication nodes in DeCredit and a number of region-based Oracle credit nodes will be set up. At the same time, a comprehensive score is assigned to users based on the data uploaded by the said selected institutions, and the comprehensive score is

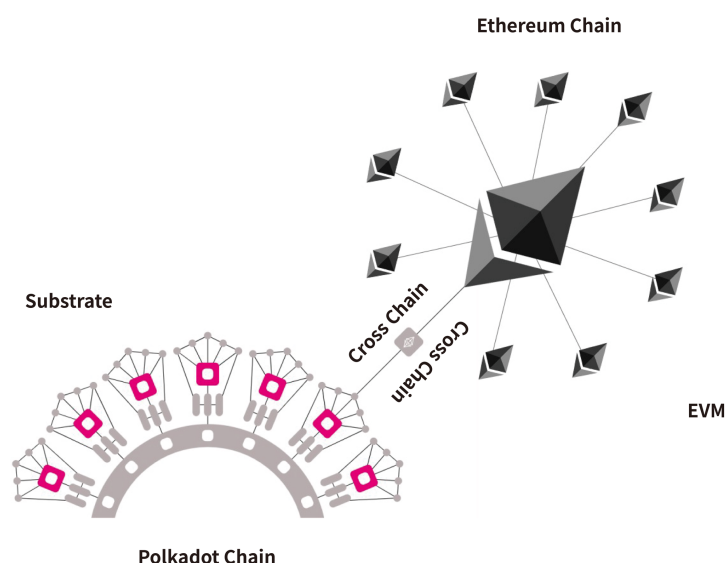
transmitted to the DeCredit blockchain through the Oracle machines for the purpose of assessing the credit line and APY in terms of crypto credit loans.

In the second phase, region-based Oracle machine nodes will be integrated to build a globally distributed Oracle credit network architecture. At this phase, returning data to individuals is achieved through decentralised identifiers (DIDs) and personalised credit models will be formed. DeCredit Oracle machines will provide individual assets, liabilities, flow and other credit limits for credit loans.

The DeCredit network of Oracle machines will operate with a distributed and collaborative mechanism, taking into account the regional regulatory environment of credit.

The Systematic Architecture of DeCredit

DeCredit is a multi-chain deployment system architecture. DeCredit is built on a cross-chain architecture, based on Ethereum and Polkadot enhanced multi-chain architecture.



Polkadot offers a broader view and solution to address scalability, speed and cost, allowing for more personalised blockchains, interoperability and upgrades between blockchains and inter-chain autonomy, enabling seamless internal and external communications for DeCredit loan scenarios, building cross-chain asset transactions and lending practices with true interoperability and continuous scalability.

The BSC is a public chain with great potential. DeCredit will also actively lay out the BSC ecology and is committed to becoming the leading lending product on the BSC.

4. The Key Features of DeCredit Protocol

4.1 Decentralized Multitype of Asset Staking

DeCredit builds liquidity pools based on decentralised protocols, which we call M pools. M pools are primarily funded by cryptocurrency cstakings and to start with we will support main cryptocurrencies. The users deposit their cryptoassets into the liquidity pool and lenders lend out funds from the pool. At the same time, DeCredit has also established a D-stablecoin liquidity pool, which is primarily used for credit lending. In terms of liquidity pool risk management, DeCredit uses a fully see-through funds management algorithm based on the blockchain and the whole process is operated on-chain by smart contracts.

In the DeCredit credit rating system, the rating threshold for staking users is L0 users, i.e. no threshold users.

DeCredit Collateral Lending Algorithm Model of L0 Users

- The borrowed funds must first be staked and are always less than the value of the collateral, i.e.

$$\text{DeCredit Lend} < \text{Collateral}$$

- Taking into account liquidation risk, cryptocurrency volatility risk and in order to avoid triggering systemic risk, DeCredit sets Loan-To-Value (LTV). Each reserve has a specific Loan-To-Value (LTV), which is calculated as a weighted average of the different items that make up the collateral.

Loan-To-Value (LTV) reflects the collateral lending risk ratio, standing for the ratio of loan-to-value to collateral value, with the maximum LTV acting as the core element of risk management. When the maximum LTV is allocated to a low level, the overall credit loan risk will become lower.

The borrowing position supports two interest rate models, fixed rate and variable rate. The borrowing time is open-ended, i.e. there is no specific repayment time required and the loan can be repaid (partially or fully) at any time.

Liquidation of a borrowing position may be triggered when prices fluctuate. A liquidation event occurs when the price rises and the collateral falls below a threshold LQ, known as the liquidation threshold. Reaching this ratio leads to a liquidity bonus, which will provide an incentive for liquidators to purchase collateral at a discount. Each reserve has a specific liquidation threshold, the same as LTV. The average liquidation threshold L_a is calculated using a weighted average of the liquidation thresholds of the underlying assets of the collateral to

perform this operation dynamically. At any time, the borrowing position is characterised by a risk management factor function H_f , which is a function of the total collateralised loans.

$$H_f = \frac{SUMCollateral * L_Q^a}{SUMBorrows + SUMFees} \text{ when } H_f < 1$$

The role of liquidator is introduced in the DeCredit system. The liquidator liquidates credits with a health index of less than 1, for which the liquidator will receive an incentive of a certain amount of the total value of the collateral. This incentive enables the liquidator to liquidate unhealthy loans in a timely manner, thereby safeguarding the financial security of the system as a whole.

4.2 Credit Lending

The DeCredit credit lending product is based on a liquidity pool that introduces off-chain credit assessment into the lending product, gradually reducing collateral in the credit lending and finally achieving zero collateral, thus avoiding the current DeFi over-collateralisation dilemma.

For example, on a given DeFi lending platform, if you want to borrow 100 USDT, you must stake 150 USDT, which is a very low utilisation rate. While the DeCredit credit lending can reduce the collateral ratio. The DeCredit credit loan facility is able to reduce collateral ratio. If the said user is a L2 user after the credit assessment, the user may just stake 70 USDT to borrow 100 USDT. Along with the

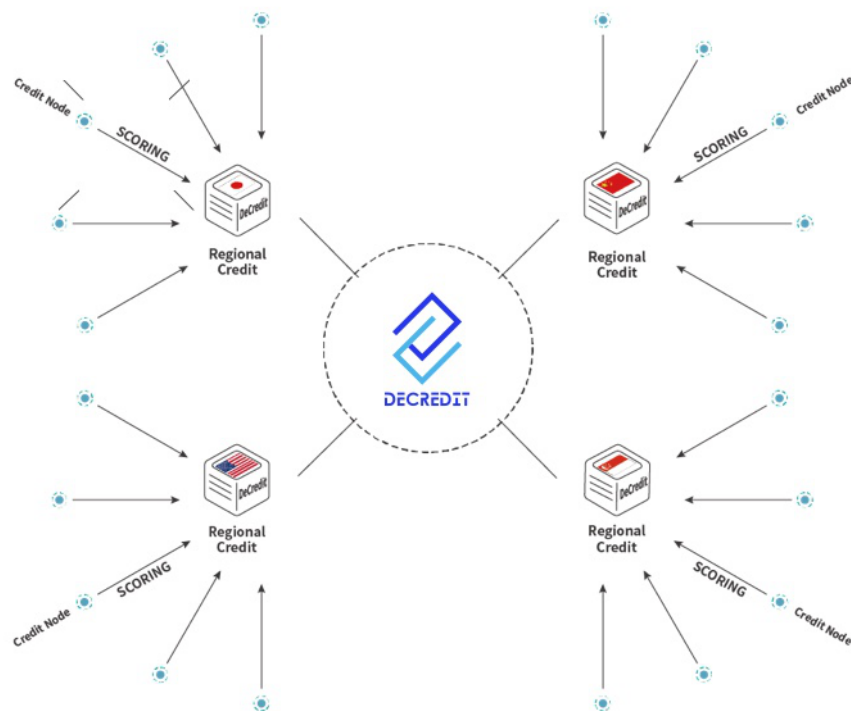
more frequent default-free loans and the maturity of DeCredit ecology, the collateral ratio will become lower and lower with manageable risks.

The mechanism of DeCredit credit loan works in a decentralised, smart contract driven manner, through collaborative Oracle (Phase 2) feed price, under the credit model algorithm assessment, the borrower's creditworthiness and repayment ability are effectively assessed and the borrower is given a lending ratio corresponding to his or her credit scores. And after a credit rating, the borrower receives stable cryptocurrencies from the liquidity pool at a low collateral rate.

Authentication Nodes and Credit Investigation Oracle Machines

In order to obtain real and latest credit information of users, DeCredit employs Oracle credit service linking digital currency finance with the real world to serve DeCredit lending practices.

The first phase of DeCredit will be operated as credit authentication node mechanism and the nodes said will be incorporated into Oracle nodes to build two or three regional Oracle networks. In the second phase, the Oracle nodes will be extended to more third-party credit institutions to build a global collaborative Oracle credit network.



Key Architecture of DeCredit Oracle

- **Oracle Service**

The Oracle service enables the mapping of the on-chain contract to the user profile by bridging the individual credit profile and the underlying services on the DeCredit chain.

- **Aggregation Smart Contract**

It is a set of credit smart contracts running on the Polkadot parallel chain, providing an interface for credit service calls, whose function is to respond to user Oracle requests, rejecting and approving applications according to rules.

- **Credit Adapter**

This is an off-chain data adapter running on an Oracle node that receives aggregated smart contract instructions, routes to a designated network of collaborative Oracle sub-centers (e.g. China jurisdiction, EU jurisdiction), obtains the user's asset assertion credentials, captures the user's asset status and returns the results to the Smart Contract via the Oracle network.

DeCredit's decentralised credit services on its global foot will include :

- Introduction of credit data accumulated in the traditional financial system, and proof of solvency , such as bank income streams, real estate certificates or other supporting information.
- Leveraging the credit data from partners. For example, DeCredit works with trustworthy and widely accepted exchanges to provide a way for users to complete creditworthiness assessments through exchange assets and money streams.
- The relevant asset and transaction data, such as borrower's lending flows, are retained in the system over time.

Region-based Oracles

Credit investigation is a fundamental part of the credit market and has obvious national and regional differences, with each country having its own well-established operating mechanisms and rule systems. In order to lay out the global

market, DeCredit credit investigation Oracles are carried out in a coordinated regional manner, with Oracle services in the US, China, the EU and Japan respectively.

For the sub-centres' Oracle services, there is uniformity but also differentiation. Uniformity means that the interface to the Oracle services in each sub-centre uses the same Oracle services and the same set of smart contracts; differentiation means that the Oracles in each sub-centre only serve the credit of users in the region, and their credit data and privacy protection are subject to local regulation. The Oracle service needs to rely on credit data from authorities in various countries and regions. To promote the development of the Oracle service ecosystem, DeCredit has dedicated 10% of its total tokens to support the construction of Oracle services around the world.

Aggregated Credit Investigation Oracles on a global footing

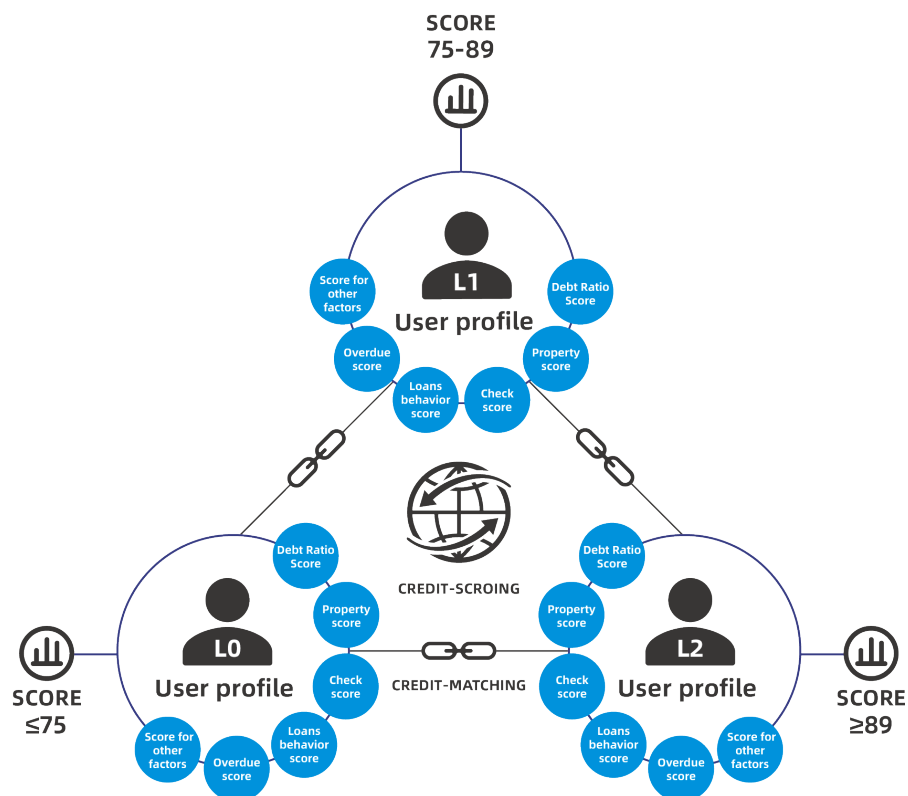
Along with the maturity of Oracle credit machines in some regions, we will explore the construction of a global aggregated Oracles credit machines and upgrade the Credit-Scoring algorithm to make it applicable to a globally integrated credit product and Oracle governance mechanism.

As personal credit investigation is a complex proposition that requires multiple dimensions of user data in order to provide credible credit assessments and needs to be applicable to the regulatory policies of each country, DeCredit will adopt a

development path from credit certification centres, to regional decentralisation and then to collaborative decentralisation.

Credit-Scoring Algorithms

The Credit-Scoring algorithm uses mathematical and statistical algorithms to build different models based on the information entered by the user or the credit information, to analyse the user's profile in a comprehensive manner and to calculate the individual scores of several dimensions, and finally to give the final composite score of the individual. User qualifications and models will be executed using smart contracts.

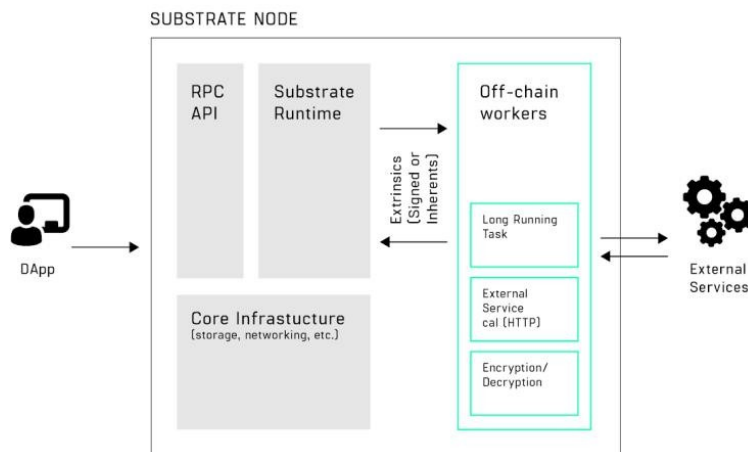


As shown above, the assessment module of individual credit qualification includes such modules as debt ratio, property analysis, enquiry analysis, borrowing behaviour, overdue analysis, other factors score, etc.; the algorithm will make a comprehensive judgment on each individual score by building a special model, then based on the score of each individual, the final comprehensive score of the individual will be calculated and then output. One must note that, all data will be managed on the blockchain system.

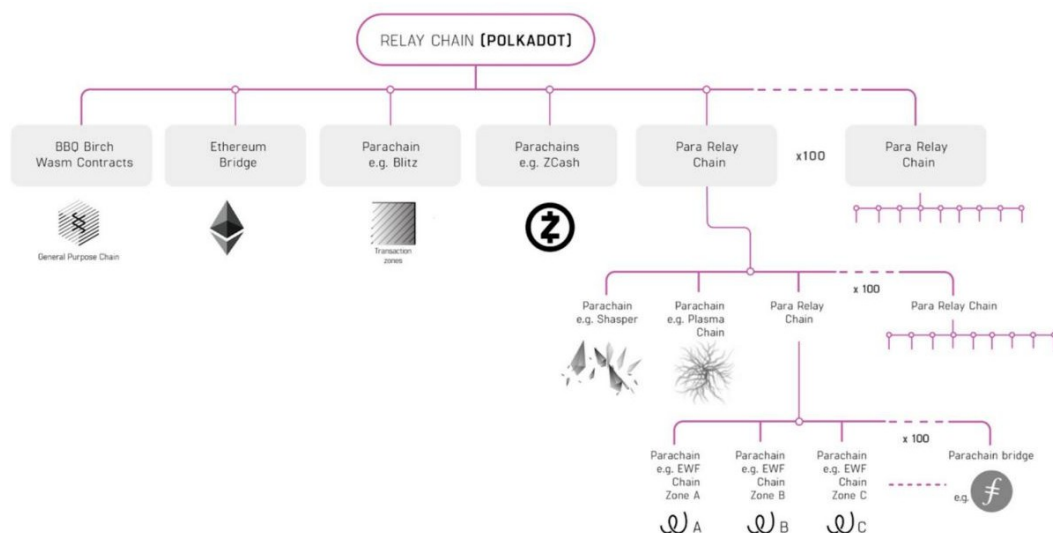
An individual credit score reflects his/her creditworthiness in a range of scores, generally defined as the higher the score the lower the risk (or the better the credit). Decision makers will be provided with the final output score and analyze the risks of low scores, thus taking action to avoid and mitigate the risks. Different business scenarios present different preferences for risk levels and the DeCredit will choose whether or not to provide services to users based on the risk preferences.

4.3 High-performance Cross chain Interoperability

DeCredit is built on the architecture of the Substrate of the Polkadot, which introduces a relay and parallel chain structure to enable blockchains running on the ecosystem to interoperate with each other in an efficient and secure way, and it allows asset transactions across different blockchains. Based on the Polkadot architecture, DeCredit is better suited to credit business scenarios, for multi-capital and diversified loan needs.



Substrate's architecture allows for the rapid development of credit business scenarios. And based on Polkadot's cross-chain architecture, DeCredit creates credit loan farms that will directly inherit good multi-chain interoperability, compatible with inter-chain interoperability, and thus able to open up the financial flows of each credit loan businesses. By doing this, the DeCredit will share core credit data with other DeFi protocols, and form a complete credit chain network.



DeCredit will support cross-chain asset transactions with the Cross-chain Message Passing (XCMP) functions, which requires a channel between two parallel

chains to send messages and communicate with each other. In the sender-parallel chain, the message will be dispatched and sent to the relay chain. The destination and timestamp will be included in the message so that it can be determined. The collator node on the receiver parallel chain will pick up this message, as it continuously asks the network for new messages. If the verification completes successfully, the verifier on the network, which will compress the proposal block as a hash and replace it with the relay chain to allow the message to complete between the parallel chains. If the verification completes successfully, the verifier on the network, which compresses the proposal block as a hash and replaces it with a relay chain to complete messages between parallel chains.

4.4 Distributed Storage of Credit Data

The basic concept of credit is information sharing, we will adopt a distributed storage (e.g. IPFS) scheme to store credit data, achieve decentralised sharing of credit data and scoring data, and promote the trans-border data flow of credit data.

Credit data producers act as nodes, and the static description data, relationship data, behavioral data, reputation data, credit data and their affiliated resources are stored as data DNA on the distributed network and such data will be further assetised and stored in the chain to form trusted digital assets.

DeCredit the data will be recorded on the blockchain relatively according to their scenarios in ways of recording the users' data in the form of agreement through simple and efficient data collation and compression.

A chain of trusted relationships of DeCredit will be naturally formed based on the traces left by credit data producers, their relationships and the level of trust from other protocols. Additionally, traceability and rights confirmation will be available and data can be disseminated and exchanged within the chain of trusted relationships on the conditions of protecting the rights and interests of individuals and ensuring the privacy rights within the network.

Strengthened by the team's experiences in the credit sector, DeCredit has joined forces with various organisations to create shared high-risk customer lists, forming a decentralised blacklist of fraudulent figures. We have also built a list repository platform, which is updated, maintained and validated by all institutions through smart contracts, and offers a blacklist rewards program that rewards every valid blacklist data upload with tokens.

DeCredit's blacklist repository will be recorded on the blockchain and jointly maintained by institutional nodes in a distributed storage approach, offering the advantages of consistency, sharing and openness.

4.5 Privacy Preserving Credit Data of Users

There are two privacy protection issues with personal credit data stored on the blockchain: data confidentiality and the right to erasure. Data confidentiality refers

to the fact that credit data is only visible to the user and the right to erasure refers to the right of the user to request erasure in certain circumstances.

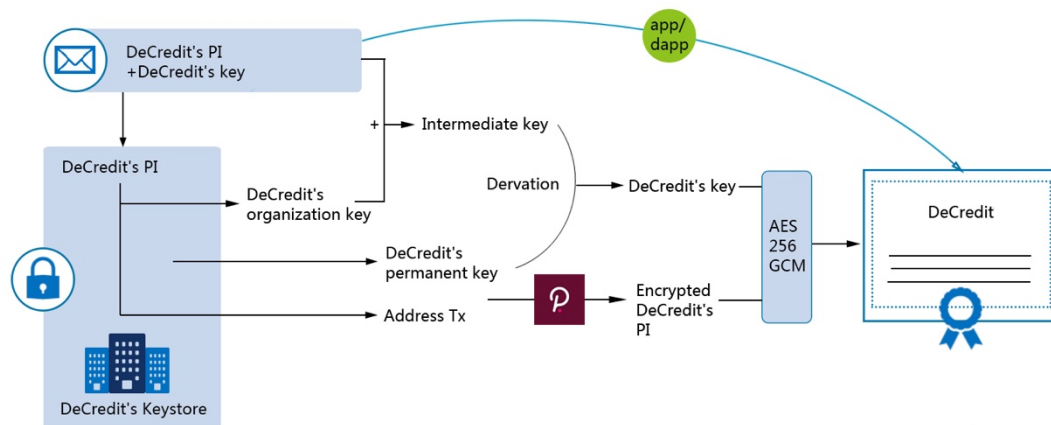
According to the EU Parliament's study, to protect credit data by means of "multi-level encrypted storage of personal data on the blockchain", has potential to solve the confidentiality and erasability of credit data and meets the EU's GDPR standard for privacy.

In order to protect the user's data, we first need to ensure that the data is not publicly available, but the user's credit data is so personal that even if it is stored on the DeCredit project's servers there is no guarantee that only the user will know about it. While if it is placed on the blockchain, the data volume would be too great a burden on the blockchain.

Considering this, we use the "off-chain data storage plus on-chain DNA fingerprinting" approach, where we store the hash value, which is the proof of the authenticity of the data on the blockchain, and the hash value of the same offline file is exactly the same. When a call is required, a pointer to the hash operation shall be presented, then the data will be retrieved and proof is provided by comparison.

The solution to satisfy the right to erasure is the following: the DNA values of personal data are stored in the DeCredit chain. This is encrypted using a triple key, one proprietary to DeCredit, one persistent Persistence key and one held by the user, whose encryption algorithm is AES256GCM, where the Persistence key is generated by the smart contract and stored on the server, as shown in the

diagram. If a user exercises the right of deletion and requests that the information on the chain be removed, this can be done by destroying the Persistence key, which is encrypted with AES256GCM.



5. Economic Models

CDTC is the governance token on DeCredit and holding CDTC means the right to govern the DeCredit system. With great recognition and value in the DeCredit ecosystem, CDTC is defined as the public token (platform token) that circulates throughout the entire DeCredit. And CDTC has a pivotal role in both the scenario and the wallet ecosystem.

The total number of CDTCs issued is 300 million, which will be distributed as follows:

Ecosystem development:

25% of the total volume (i.e. 75 million CDTCs) will be used to support the ecological development of credit lending and provide ecological support to lending and borrowing entities.

Staking and yield farming:

20% of the total volume (i.e. 60 million CDTC) will be used for node staking and yield farming.

Marketing and community Treasury:

12% of total volume (i.e. 36 million CDTCs) will be used for marketplace and community governance, to achieve community building, promotion, branding, and node incentives.

Team/Advisors/Employees:

20% of the total volume (i.e. 60 million CDTCs) will be distributed to team advisors, early investors, and early supporters.

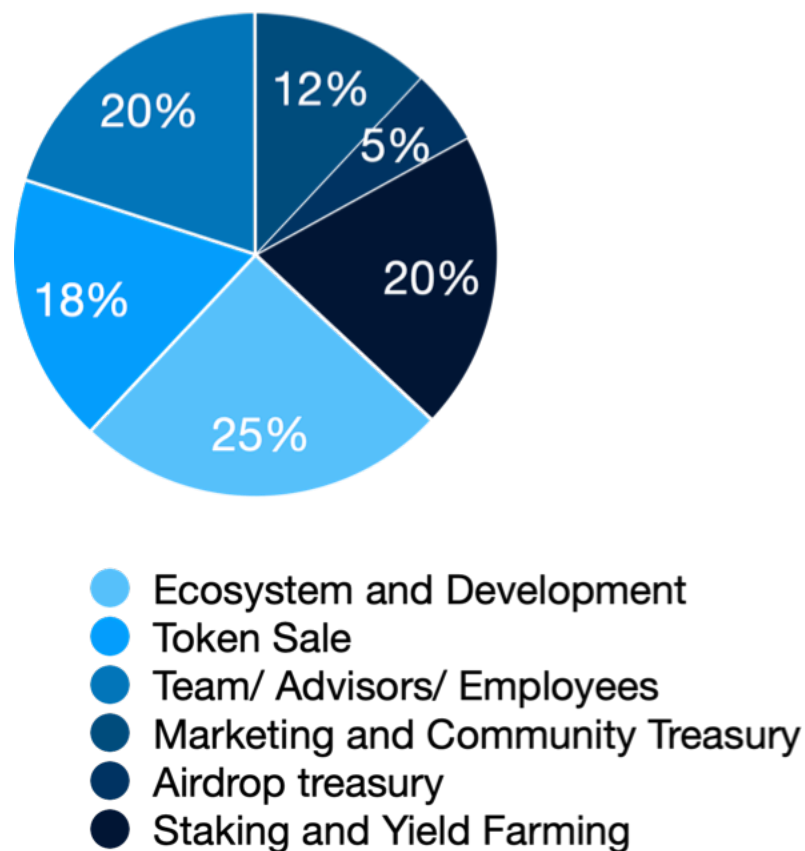
Token Sale:

18% of the total volume (i.e. 55 million CDTCs).

Airdrop treasury

5% of the total volume (i.e. 15 million CDTCs).

CDTC will issue a total of 300 million pieces, distributed as follows:



6. Community Governance

6.1 On-chain Governance

The governance mechanisms in the CDTC protocol stem from the interplay of community participation, incentives, self-regulation and policy management, all of which are adapted to suit the needs of the market and to survive with it. Therefore, we emphasise community participation and the fact that every major decision is made through shared community governance such as voting.

Governance rights of holding CDTC include:

- Voting on major matters, including the Credit Loan project

- Addition of new cryptocurrencies or stablecoins
- Adjusting variable interest rates
- Setting fixed interest rates
- Oracle services
- Product rule improvements
- Rating score rule changes
- Rating level adjustments
- Improvements/suggestions

6.2 Credit Data Contributions from Communities

DeCredit offers data analysis for a wide range of industries, institutions, government agencies as well as for individuals and businesses that produce credit data.

6.3 Oracle Governance

Local institutions that promote and improve the Oracle service will be rewarded with specific funds as part of 10% of the CDTC tokens that are used to incentivise the building of Oracle worldwide.

6.4 Staking

When users use DeCredit to search the credit data of companies, institutions or individuals, they can make a staking and thus consume the CDTC.

The individual user sends a request for loan and stakes CDTCs; the verifier verifies the authenticity of the user's credit data and is rewarded accordingly, and if the credit data is verified as false, the staked CDTC will be destroyed.

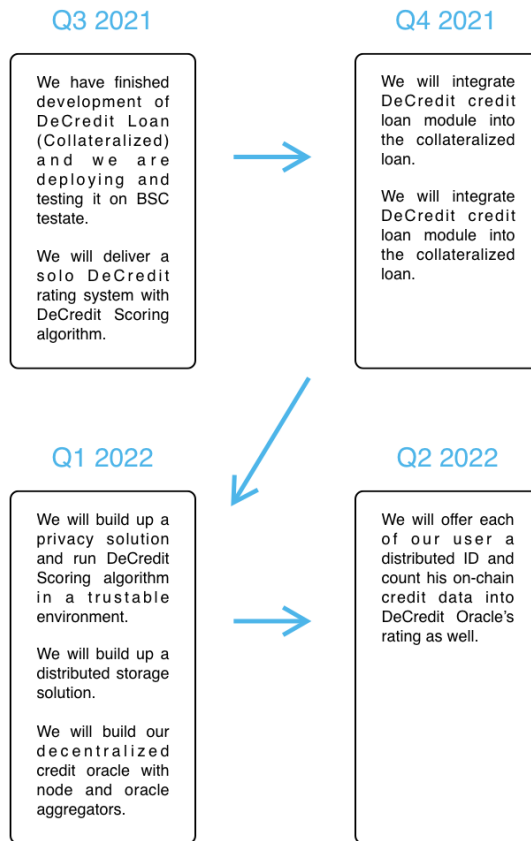
Institutional users are customised with open scoring and matching algorithms, and they can deploy smart contracts on the DeCredit chain to match user requests automatically.

When an order is matched, the institutional user issues a loan to the individual user with reference to the contents of the smart contract, and the CDTCs staked by the individual user will be destroyed. The number of tokens to be staked for a credit request is determined by community voting.

7. Product Planning

Changing rapidly is innovation in DeFi sectors. We are witnessing the profound evolution of the global financial systems and the rise of the open finance represented by DeFi. That being said, the entire open finance market is in its early stage and far from mature. DeCredit stands on the shoulders of its predecessors and looks forward to building the DeFi protocol 2.0 through our credit lending and multi-chain layer2 extension solutions, coupled by our initial and long-standing commitment to providing innovative, revolutionary, and decentralised DeFi services for users with financially manageable risks to build a much healthier open finance market.

Road Map



- **Q3 2021**

We have finished development of DeCredit Loan (Collateralized) and we are deploying and testing it on BSC testate.

We will deliver a solo DeCredit rating system with DeCredit Scoring algorithm.

- **Q4 2021**

We will integrate DeCredit credit loan module into the collateralized loan.

We will expand our credit loan to more real world scenarios. (To cooperate with a real estate project)

- **1 st Half 2022**

We will build up a privacy solution and run DeCredit Scoring algorithm in a trustable environment.

We will build up a distributed storage solution.

We will build our decentralized credit oracle with node and oracle aggregators.

- **2 nd Half 2022**

We will offer each of our user a distributed ID and count his on-chain credit data into DeCredit Oracle¹ s rating as well.