



Payment system.

Whitepaper

Part 1

B2C

1. Summary

CREDO is a new generation payment system based on a financial algorithm that involves the participation of an independent agent in the transactions of purchase and sale of goods or services. The system acts as an agent between the buyer of goods and the seller, providing the parties with payment processing for a profitable transaction.

The financial system CREDO is made on the algorithm of issue of electronic derivative financial instruments (certificates), which are a means of payment and represent the property right to claim of the owner of this certificate (buyer) to the issuer (seller).

The functional of the (advanced) business model of CREDO has already been provided with all the necessary software and hardware and confirmed by positive test results in Europe. CREDO has a patent for the designed system. The project's flexible architecture and reliable financial model allow for easy scaling of the system and its configuration for operation in any country of the world.

CREDO is a multifunctional payment system, combining modern architectural solutions and firmly established banking standards. This approach gives a wide range of unique opportunities in the area of financial projects, from payments and lending to investments and use of any type of electronic currency in the real sector.

CREDO is a ready financial instrument, combining two markets: classic financial and new crypto currency. Due to a flexible business idea, the project easily adapts to the requirements of regulatory bodies in any country of the world, which allows for mutually beneficial integration with the real business in B2C, B2B and C2C sectors*.

* - this Whitepaper (part 1) describes the capacities of the projects to work in B2C sector (Business-to-consumer).

The capacities of the projects in other sectors (B2B and C2C) will be described in additional documents under new campaigns for expansion of the network of investments partners of the project.

2. Terms and definitions

“Electronic Certificate”

The main unit of account in CREDO system is an Electronic Certificate. The Electronic Certificate is an analogue of a derivative financial instrument, also called a Derivative, under which the parties (buyer and seller) assume the right or obligation to perform certain actions with respect to the “Underlying Asset”.

Hereinafter, the “Electronic Certificate” and “Derivative” shall be considered synonyms.

“Underlying Asset”

The Underlying Asset in CREDO system is a commodity or a service offered for delivery or execution by the Clients or Partners (commercial and service companies). Underlying Assets ensure the issue of electronic certificates. Therefore, electronic certificates of CREDO are always secured with real goods or services.

“Client”

The payment system CREDO is designed for use in various business areas: financial, banking, commercial, service. Its clients are the companies that issue electronic certificates, secured with their obligations to deliver goods or perform a service. The clients of CREDO in the example of implementation into the commercial and service business (B2C) are commercial and service companies and retailers.

“Partner”

CREDO offers many opportunities for joint business development. The partners ensure the work of the payment system according to their obligations and are intermediaries between the processing CREDO and real consumers. A partner can be a Client or Operator.

“Operator”

A partner is a company or a group of companies that ensure the purchase and sale of electronic certificates (derivatives) issued by the Clients and get profit due to a difference in their cost. Operators perform the functions of CREDO providers, giving the Clients flexible opportunities of work in the system on mutually beneficial conditions.

“User”

Users are people and companies that buy goods or services using CREDO, as well as use the system for other financial settlements or transactions.

3. Options for implementation

The business model of CREDO includes two options for implementation:

- 1) basic model (work in B2C segment);
- 2) advanced model (additional options in B2B, C2C sectors).

The financial payment system between the clients, partners and operators CREDO has two main payment schemes:

- 1) Cash-Forward;
- 2) Traffic-Forward.

See more information about these models below.

4. Basic business model (B2C)

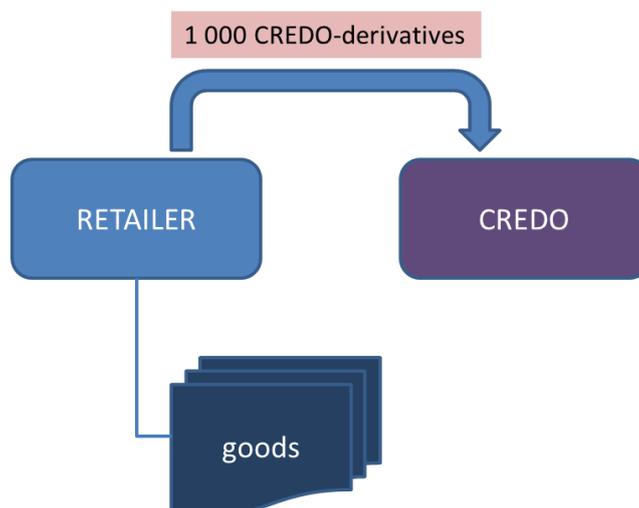
The project does not offer another system of customer loyalty, although it can be positioned as such on the retail market in order to simplify the understanding of the basic model.

The basic business model provides the customers of goods with discounts, and the sellers of goods – with a one-time security payment for future acquisition of a significant amount of goods.

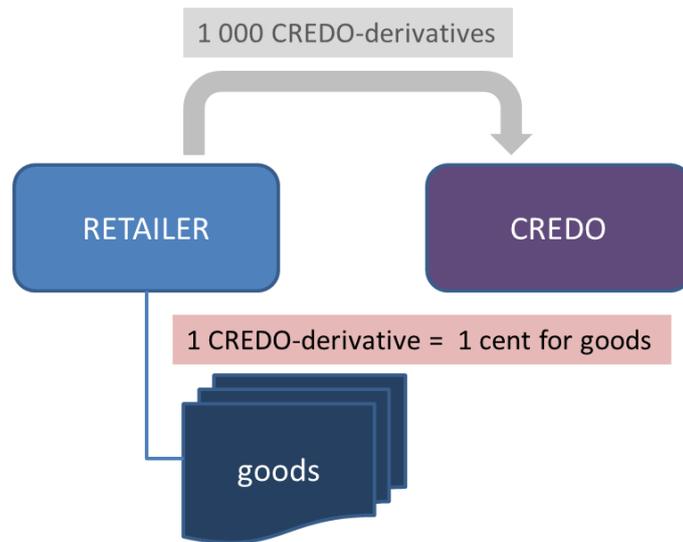
CREDO ensures the repurchase and sale of electronic certificates (derivatives) to the end consumer in basic business model. The consumer pays less than the nominal value of the certificate by the amount of the discount (for example, the customer will pay 50 certificates with a nominal value of 1 USD per each for a commodity with a value of 50 USD, but each certificate was acquired for 80 cents). The payment with certificates for goods and certificates is made simultaneously at the till. Upon getting a payment receipt, the consumer is immediately notified about the savings from the purchase.

We will consider the work of the payment system CREDO in the format of a basic business model illustrated by the example of the purchase of goods in retail.

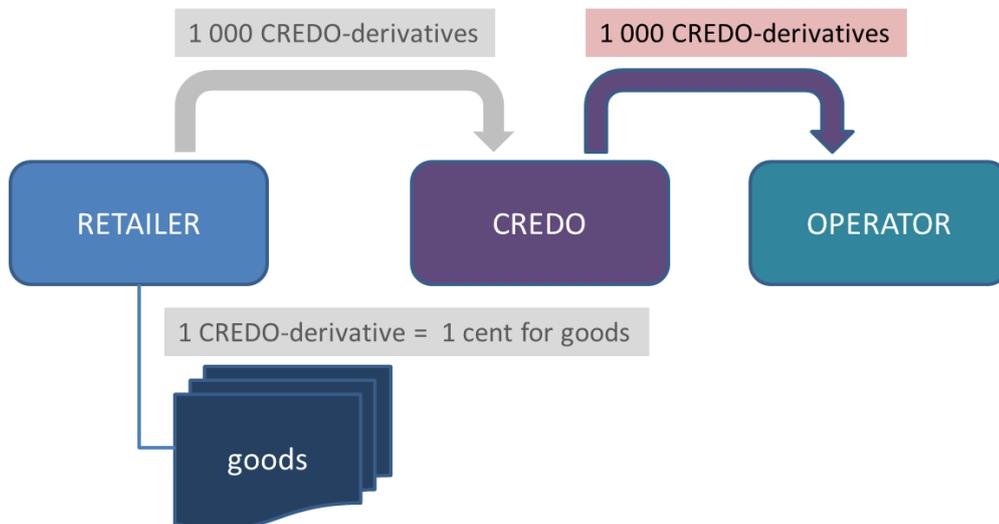
1. The retailer (commercial company), being the Client, issues electronic certificates in CREDO system in the amount of 1 000 certificates.



2. The issuer (retailer) secures the electronic certificates (derivatives) with an obligation to transfer the goods to the bearer for the amount of their nominal value. The issuer establishes the cost of derivative as equal to, for example, 1 cent per 1 electronic certificate.



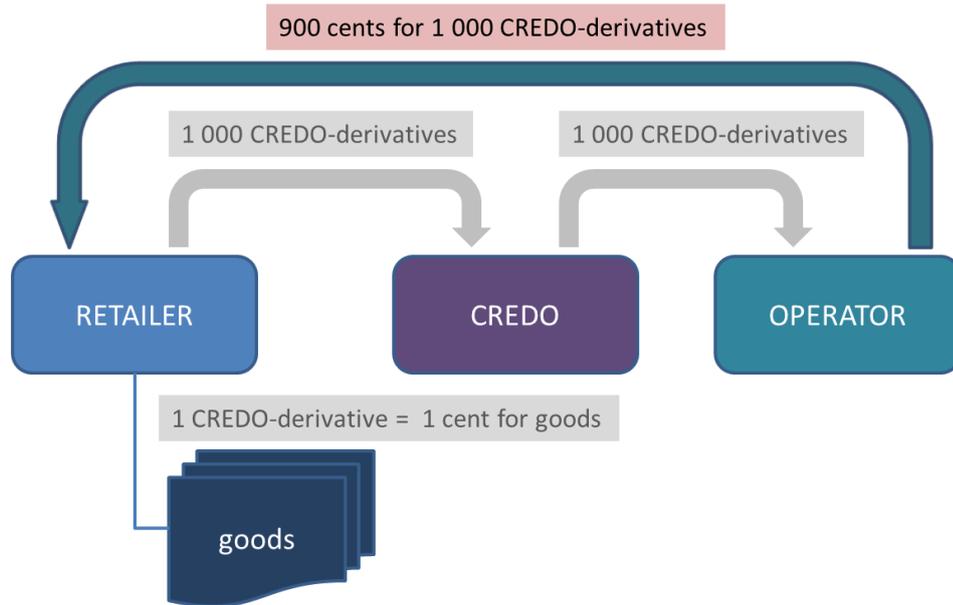
3. The operator, being an authorized partner of CREDO, receives the derivatives (electronic certificates) issued by the retailer in the system.



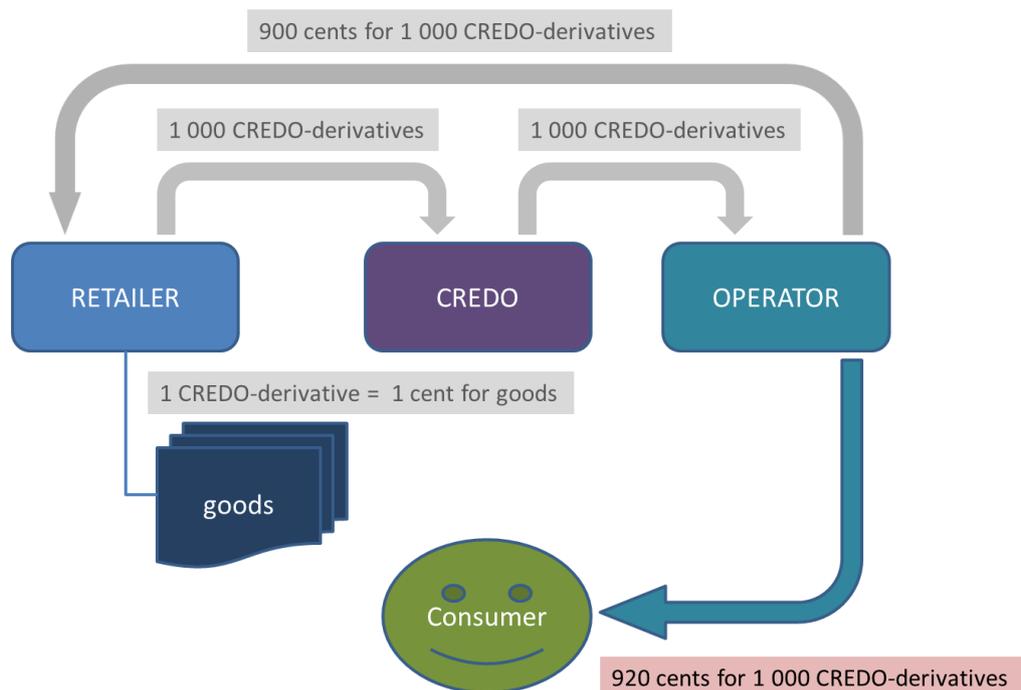
4. The operator pays for the derivatives to the retailer at a cost lower than the nominal value, for example, with a discount of -30%.

There are several payment options:

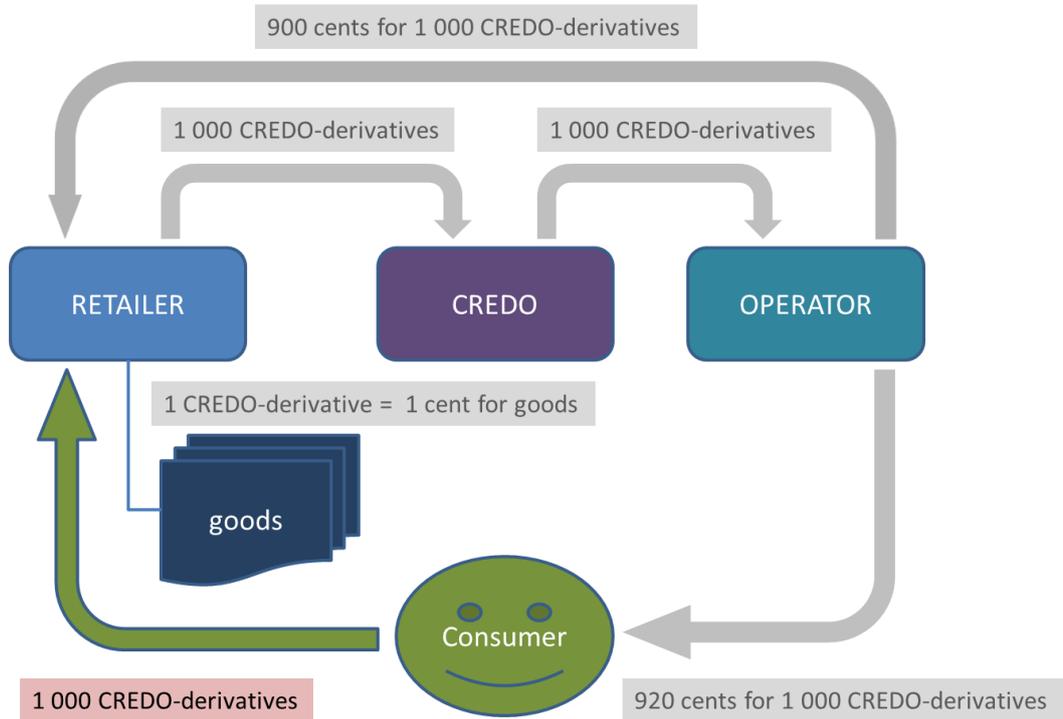
- a) preliminary security payment (Cash-Forward), when the Operator makes a payment in advance as a deposit and then receives the derivatives;
- b) payment on delivery, when the Operator pays for the derivatives issued by the Client after their issue and sale to the customers (Traffic-Forward).



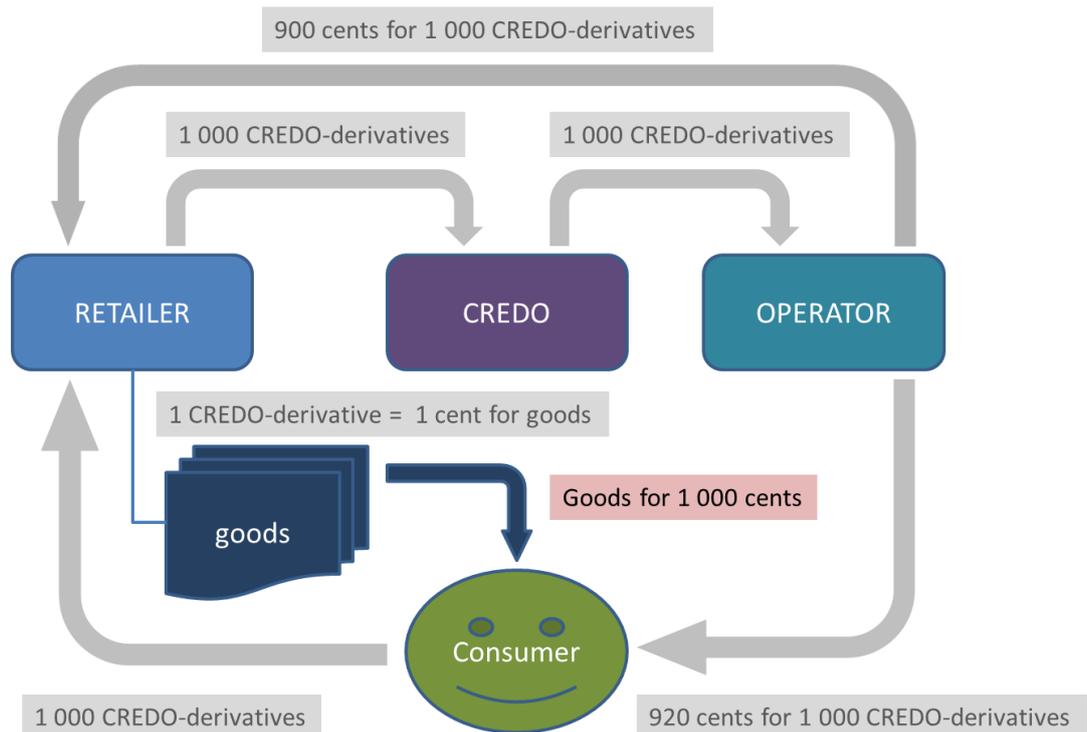
5. The operator sells electronic certificates to the customers that want to acquire goods at a significant discount (less than the discount from the retailer, but significant for the customer, for example, -20%).



6. The customer, having repurchased derivatives from the Operator, submits them to the issuer for exchange for the goods.



7. The customer receives goods from the retailer for the amount of the nominal value of the derivatives submitted for exchange and, therefore, receives the goods at a significant discount, for example, -20%.



Benefits for the parties:

- The Client of CREDO (Retailer) receives the preliminary (guaranteed) payment for goods and increases its goods and money turnover.
- The Partner of CREDO (Operator) gets a profit as a percentage of the Client's turnover (without the fee of CREDO) and increases the number of users of the system.
- The User of CREDO (Customer) receives goods at a significant discount without any additional efforts.

It is important to understand that the users of CREDO system (normal people who buy goods) do not need to think about the above process or make any important decisions. The user does not need to perform any complicated actions or visit the offices of CREDO partners in order to connect to the system. The user does not need to share personal information or go through the process of verification.

All the User needs to do in order to use CREDO is to add the card to the bank card to the payment system CREDO using one SMS.

The User can also order a plastic card of CREDO, which will be a physical presentation of his/her account in the system and can be used in any transaction, including with crypto currency.

5. Advances business model (B2B, C2C)

The advanced business model CREDO provides the opportunities to work not only as a provider of payment transactions of purchase and sale of goods/services, but also as a provider of:

- 1) transactions of sale of tangible assets;
- 2) credit transactions;
- 3) payment transactions;
- 4) banking transactions;
- 5) crypto currency transactions;
- 6) systems for access control and storage of personal data, including private cryptographic keys.

The advanced functional of CREDO allows to announce the potential of the project comparable to such world systems as MasterCard or VISA.

The advanced business model allows to work:

- 1) in international transactions of purchase and sale of assets: the electronic certificate of CREDO is a derivative financial instrument (derivative), confirming the buyer's right to the underlying asset and the seller's obligation to transfer the underlying asset to the buyer.
- 2) in credit systems: the buyer can pay for CREDO certificates from its credit account in any bank; or if the certificates are not sufficient, directly during the payments; CREDO system, having information on the credit (or trust) agreement of the buyer with the

bank, can replenish the account of the buyer with the necessary number of certificates for payment for the goods;

- 3) in the payments with discount coupons, when the sites that make coupon sales are partners (the issue of derivatives in this case can be made without a security payment and without a preliminary agreement with the credit institution);
- 4) in the systems for access or identification control: a CREDO card (plastic or virtual) can be a medium of an electronic digital signature or a key, or other information of the user at will;
- 5) in financial or crypto currency transactions: a CREDO card can be used in form of a bank card or a crypto currency wallet;
- 6) in payment systems jointly with such providers as BitPay, PayPal, MasterCard (CREDO will act as an intermediary that ensure the interfacing of different currencies without any reference to the state registration of the parties of the commodity-money exchange).

6. Cash-Forward

The scheme of financial payments between partners, clients and operators can be implemented as a so-called Cash-Forward model, when the Operator make a preliminary security payment to the Client (issuer of derivatives), and then sells the Client's obligation to the buyers of its goods.

Despite the fact that the Cash-Forward scheme requires a high working capital from the Operators, it has a number of significant advantages:

- 1) the operator, and subsequently the buyer of goods, receives a significant discount from the issuer due to the preliminary security payment;
- 2) the client that issues electronic certificates gets a high turnover of money and a guaranteed channel for sale of goods.

7. Traffic-Forward

Basic and advanced CREDO business models can work according to the Traffic-Forward scheme without a preliminary security payment, when all payments between the operator, the client and users are made at the moment of purchase of goods or service.

The Traffic-Forward scheme does not give the clients such opportunities for capital turnover, but, which is important, ensures an additional inflow of new buyers, interested in the advantages and capacities of CREDO.

Thus, the issuers get new buyers, and the Operators expand the pool of Clients without additional investments in security payments.

8. Marketing studies (basic model B2C)

A marketing study was conducted by order of CREDO. It showed a high level of interest of consumers in the system.

- 75% of the respondents were not against the participation in the program.
- 25% of the respondents were ready to become participants of the program immediately.

As a result of the marketing studies, it was concluded that at the first stage of implementation the project should be presented as a program that allows to save money, that is a loyalty program, which corresponds to the basic business model.

The retail market offers many different loyalty programs, both independent and in various alliances. They are mostly focused on reducing the outflow of clients, and less on attracting new clients. The costs for conquering new clients are much higher than the costs for consolidation of the existing client base.

The financial model, which is the basis of the basic functional of CREDO, allows the retail chain not only to form a cluster of regular customers, but also to attract new consumers without economic losses and additional investments.

The competitors of CREDO in its basic model for B2C market are multi-brand loyalty systems and co-branding bank cards. All these programs have high quality developed CRM-systems for work with customers and often a client portfolio diversified by industries. The geography of their activities is usually limited, mostly by megalopolises. The only source of income for multi-brand programs is the remuneration from retail chains – clients of the program.

The main competitive advantages of CREDO system are:

1. CREDO acts as an alternative source for attracting financial resource for the business;
1. CREDO provides an increased direct discount to the consumers;
2. Business clients of CREDO do not incur economic losses, forming an additional profit and reducing operating costs;
3. Active attraction of new users for the business.

9. Plan for development of the basic model

The plan for development of the basic model is based on the strategic focus of CREDO program on the growing international commercial chains.

The profit of CREDO within the limits of the assumptions will depend on the difference between the total discount provided by the Partner and the discount to the users of the system.

It is assumed that the turnover of CREDO in its basic model for B2C market will be over 300 mln \$ by 2020.

A detailed forecast of the financial indicators of CREDO demonstrates the following characteristics (for the basic business model):

- the strategy of CREDO will lead to a high turnover of the security payments made to the partners, which will ensure a high return on equity, significantly exceeding the market level of interest rates of the borrowed funds;
- the expected internal rate of return on equity of the investor of CREDO on the horizon of 4-5 years will exceed 85% per annum;
- the strategy of CREDO is capable of ensuring a high average annual growth of revenue and net profit over 45%;
- the revenue of CREDO will grow over 30% per annum;
- due to the use of the working capital for acquisition of obligations of financially stable partners, CREDO is capable of raising the necessary debt financing in a significant amount at the average market rates of bank lending;
- the raised debt financing will significantly increase the return on equity of CREDO due to the effect of financial leverage.

10. Technologies

CREDO, being a new generation payment system, is a product that combines the most advanced technologies for implementation of business models, data flow processing, storage of data arrays.

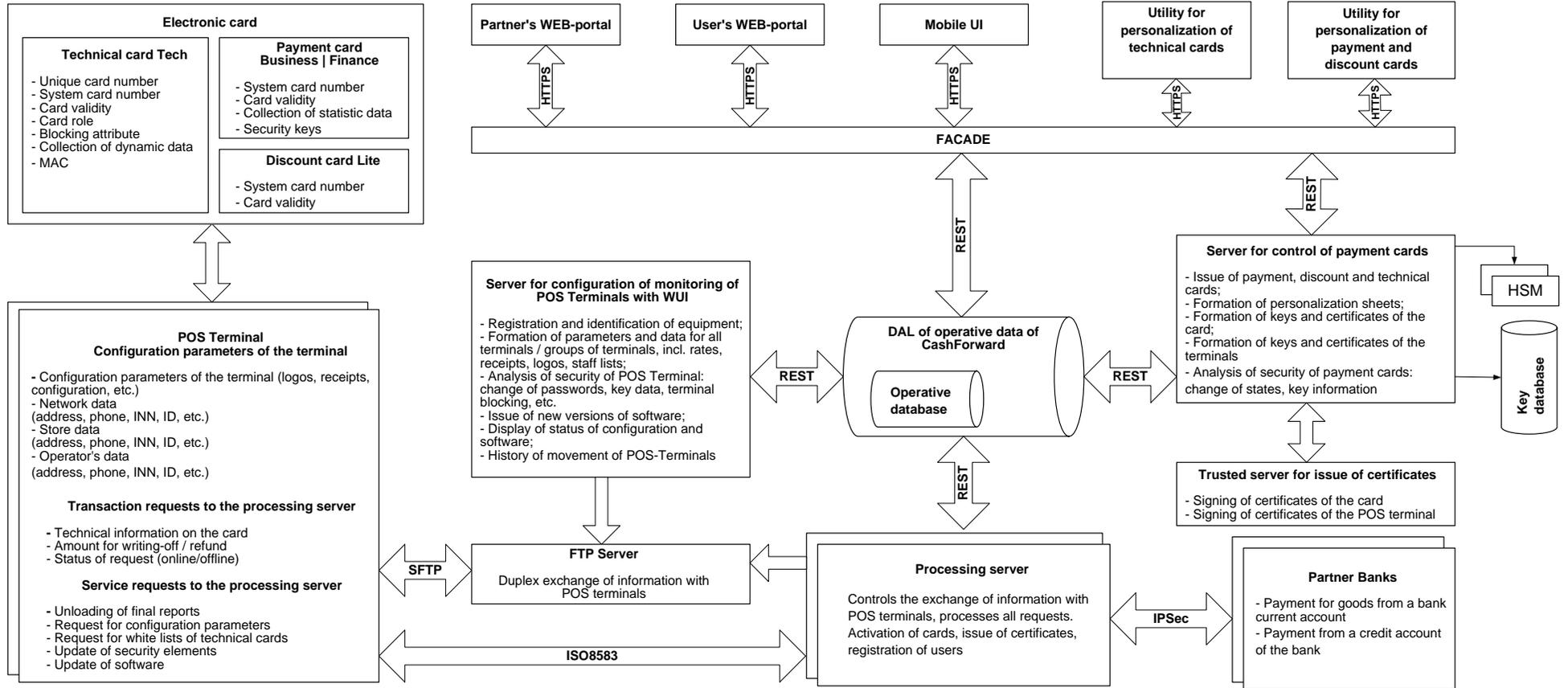
The system includes many loosely coupled components that interact in an asynchronous mode. The basis of the architectural design is a micro-service architecture that allows for horizontal scaling without stopping and restarting key modules.

According to the logical data model below, we can distinguish the following business entities:

- Electronic card
Information medium that identifies the end consumer in Credo system. Hardware safe module that acts as an electronic wallet and contains key information, including for various crypto currencies. Electronic cards of Finance/Business type are equipped with a NFC module, which allows to communicate with an applet via contactless data transmission.
- POS Terminal-validator
Device that validates the electronic card of the buyer and interacts with the processing server for transactions of purchase/return/cancellation. It implements cryptographic algorithms for establishing of a secure channel between the card, processing server, FTP server. It keeps the accounts of the actions of store operators and transactions made by the users.
- Processing server
Server for processing of requests of a POS terminal for purchase/return/cancellation. It supports the opportunity for issue of certificates, transactions with user accounts, registration of bank accounts, activation and addition of client cards. It also provides the function of exchange of crypto currency for a universal payment certificate for purchasing of goods in partner networks.
- Server of configurations of POS terminals
It forms configuration data for POS terminals and is responsible for registration of the terminal in the system. It implements the mechanisms for creation and transmission of technical parameters, such as receipt structures, updates, system parameters, static data for networks, operators and stores, to the terminal. It performs analytical functions to make decisions on the updates of security elements, key information, certificates, etc.
- Database
Operational data of the software package: transaction data, user information, configuration and statistical information.
- FTP Server
Server of duplex interaction with POS terminals. Unloading of final turnover reports from terminals, downloading of configuration data and updates from the configuration server

- Server for control of payment cards
Software package that issues payment cards with cryptographic protection elements. Generation of system numbers, formation of security keys, issue of authorized certificates signed by the trusted centre. Analysis of card security, change of states, remote update of microapplication cards, change of keys and certificates.
- Trusted centre
Trusted centre that issues certificates to the final points: payment terminals, cards
- HSM
Crypto-module. Responsible for calculation of keys, data authentication, formation of key materials of a POS terminal.
- Key database
Secret key data of the system that serve as a basis for calculation of transaction signatures, control sums, MAC of reporting data.

Component model



The level of data abstraction is a single service for access to the database. The service consists of many components, each of which has strictly defined obligations. The components perform operational tasks with the database. External system elements request the content of the database or initiate changes in it through REST requests.

The main platform for the database is Percona XtraDB Cluster. This platform is an Open Source branch of MySQL.

Main advantages:

- Synchronous data replication between the cluster nodes
- Equivalence of nodes in replication
- Multithreading of data replication
- Data integrity
- Possibility to use a high-speed interface of access to the data of Handler Socket mysql, which will allow to avoid caching.
- There is a solution for a hot backup of Percona XtraBackup

The database has a master-slave replication, focused on optimization of the reading operation and increasing of the fault tolerance. The balancing of requests is performed using HaProxy. The database is adapted to the modern multiprocessor architectures. It allows to back up data without stopping any processes. The processing of data flows is made using a high-speed protocol HandlerSocket, which ensures up to 750 thousand transactions per second, reducing the technical requirements for equipment, reducing the time for online payments, ensuring fail-safe operation of the platform at the peak loads, and allowing for unlimited system scaling and back-up.

A POS (Point-of-sale) terminal interacts with the processing server through TCP. The behaviour of the terminal is controlled using the banking standard ISO8583. Data MAC-key with unique, regularly updated encryption keys is used for ensuring the security of the communication channel. Basic financial commands 0200/0210, 0400/0410 are implemented within the protocol. Specialized commands for updating the key materials of the cards and the terminal are currently under development. Synchronization of the terminal is carried out through sftp and offline, which allows to perform verification in an asynchronous mode. The processing server is balanced using Nginx TCP. This allows to proxy slow connections if a GRPS module is used.

The processing server is implemented using Java NIO in the mode of non-blocking sockets in order to increase the number of simultaneously processed connections.

The singularity of the system is the use of different types of cards and provision of privileged access to the users with cards with an increased level of security. There are several types of cards in the system:

- Credo Lite
- Credo Finance
- Credo Business
- Credo Administrative

Lite is a basic card in the system. A magnetic stripe (Magstripe) is used for storing the card number and validity. In terms of security, the cards do not pose any threats, since the actual duplication of cards leads to an increase in the number of clients from the network. Any bank card can act as Lite, for which the user needs to add it via SMS. This allows to identify the user and save on the issue of plastic cards.

Finance/Business – cards with increased security, allowing to store the balance and use them in offline mode. It is a wallet that can store private keys from crypto currency wallets, as well as keys from deposit accounts. Type of cards - Javacard, Credo applet is implemented according to the specification EMV, Paypass.

Administrative – Mifare1K cards for automation of administrative access to the system. These cards allow to logging access to the system. The component of card control registers the change in the terminal status and roles of the participants. Based on the information collected, the passwords and crypto materials are changed. Further, it is planned to pass to Mifare Desfire to increase the level of security.

The secret key information is stored in a secure SAM module on the terminal, which allows you to take cryptographic calculation and evidence to a hardware-independent level. It also allows to use the application on a terminal shared with banks and use the shared memory space. Thus, the system involves scaling through integration with banks. The partner banks obtain a number of advantages, including the expansion of the area of presence of the bank, increase in the turnover by attracting new clients to the partner networks, possibility of automatic lending to the clients.

11. Investment costs (basic model B2C)

The investment budget of the basic business model of CREDO is 5.5 million USD, required for the following purposes:

Investment budget of the basic model (B2C)	MIn USD
Security audit	0.2
Capital for development, including: 1) opening of branches in New York, Dubai and Singapore; 2) integration with payment services (PayPal; BitPay); 3) integration with processing systems of the banks in the USA and Asia.	3.5
Guarantee fund for suretyship under the credit leveraging of the Operator, working under a license	1.0
Marketing	0.5
Reserve	0.3
TOTAL	5.5

The investments are raised for the launch of an advanced model (B2B, C2C) in separate rounds.

12. Details of ICO campaign (round 1)

The investment campaign of the first round will be divided into two stages:

1. Preliminary (pre-ICO)
2. Main (ICO)

The purposes of the preliminary campaign (pre-ICO) are:

1. informational preparation of investors about the forthcoming ICO;
2. collection of feedback and proposals about the project;
3. fundraising for marketing for the main campaign.

The purposes of the main campaign (ICO, round 1) are:

1. fundraising for the investment budget disbursement of the basic model (B2C);
2. attraction of Partners.

An increased discount will be established for CREDO tokens (CRD) in pre-ICO.

ICO-details		
Token price	0.1 USD	Fixed for the entire period
Discounts	Pre-ICO	ICO
Day 1	- 40%	- 15%
Day 2	- 35%	- 10%
Day 3	- 30%	- 5%
Day 4	- 25%	-3%
Day 5 and subsequent dates	- 20%	0%
Number of tokens for Bounty	3 % of the sold during the entire campaign	Unpaid issue
Number of tokens for founders of the project	None	-
Total maximum number of tokens for investors	Limited by the sales volume	Paid issue

Conditions of ICO:

1. The funds will be raised in crypto currencies: Bitcoin, Ether, Litecoin, Dash.
2. Tokens will be issued not earlier than 30 and not later than 45 calendar days after the end of ICO using a smart contract on the blockchain Ethereum.
3. Additional tokens cannot be issued without a new round of ICO. Tokens for the advanced business model (B2B, C2C) as a part of additional rounds of ICO will be

issued according to the scheme of limited issue.

4. The investor must enter the address of an Ethereum wallet for registration in the personal account.
5. Bounty conditions will be indicated on the website of ICO during the main campaign.

13. Offer for investors

The return on equity from the Operator's activities is 75%. This means that the Operator gets an annual income of 75% from the funds invested as working capital for security payments.

Fundraising for the development of the basic model (B2C) according to the investment budget is planned during the campaign in the first round of ICO (clause 11).

If additional funds are raised (over 5.5 mln USD), CREDO will create a new business unit with the functions of the Operator according to the following scheme:

- the owners of tokens will receive 74 % of the share capital (the share of each owner will be in proportion to the number of tokens);
- 25% + 1% - the share of CREDO for participation in determination of strategic plans without participation in operating activities.

CRD tokens will be an index of financial state of CREDO with respect to:

- a) capitalization of the company;
- b) number of Clients;
- c) number of Partners;
- d) number of Users;
- e) number of transactions;
- f) money turnover.

CREDO will provide an opportunity for free exchange, purchase, sale and trade of CRD tokens not more than 90 days after the end of ICO.

CRD tokens will be bound with the real capitalization of the company through a special algorithm that reflects the system parameters in the investor's personal account.

The capitalization of CREDO will increase with the growth of the number of Clients and Partners, therefore the market rate of tokens will grow constantly.

CRD tokens will perform the following functions:

- 1) capitalization index of CREDO;
- 2) equivalent of shares with respect to the rights to get dividends;
- 3) license security deposit for the right to carry out the Operator's activities.

I. Offer for all investors:

1. If the funds are raised in the amount over 5.5 mln USD, all investors will become co-founder of a specially created business unit with the Operator's powers and will be entitled to regular payments of dividends. The dividend fund from the activities of this Operator will be determined by the Board of Directors and will be at least 20% of the net profit.
2. All investors with a package of over 1 000 000 tokens receive a VIP privileged status and are included in a special partnership program, guaranteeing the Operator's license on preferable terms.
3. The owner of any number of tokens can become a member of a decentralized autonomous organization in the network Ethereum, which will receive a special collective license of the Partner and will be able to lease this license to the selected Operator. The tokens of the owner of a collective license can be "frozen" (blocked for transfer/resale and receipt of dividends) for the period of participation in the decentralized autonomous organization. CREDO will provide for the creation of an insurance fund to cover the risks of the Operator's improper fulfilment of obligations to the owner of the collective license.

II. Offer for large investors:

4. Investors that want to acquire a large package of tokens (over 5 000 000 tokens) will get an individual discount on any day of ICO, but not earlier than and not later than the announced period. The application for purchase of a large package to get a discount shall be sent directly to the project team.

14. Audit

CREDO will inform investors about the signing of a separate agreement for the services of external audit of the current activities for the purpose of minimization of the risks of incorrect spending of investment funds.

CREDO will ensure regular notification of investors about the current activities, as well as about the results of regular external audits.

15. ICO-MARKETPLACE

The ICO campaign for the project CREDO, including pre-ICO, is performed using a special service ICO-MARKETPLACE.com.

The service ICO-MARKETPLACE.com provides the following services to the project CREDO:

- 1) public offering;
- 2) marketing;
- 3) investment receipt;
- 4) issue of tokens;
- 5) exchange and purchase and sale of tokens;
- 6) independent business examination before ICO;
- 7) independent business audit after ICO;
- 8) technical support for personal accounts of investors;
- 9) information support of investors about the status and events of the project.

The development, current activities and implementation of investments of CREDO will be under the independent external control of the service ICO-MARKETPLACE.com.

ICO-MARKETPLACE.com will help to display the following information in the personal account of the investor on www.credo.ico-marketplace.com:

- a) current status of the project;
- b) results of regular external audit;
- c) project plans for further development.

ICO-MARKETPLACE.com provides information support to CREDO, but at the same time does not assume any responsibility for the activities of this project, related to the raising and implementation of investment funds, as well as for any other activity in any area in any country of the world.

16. Limitation of liability

This document is intended for assistance to the reader in the decision-making about the wish to make a further analysis of the project.

The information in this document has not gone through an independent verification, except for the analytical data that were verified by independent experts in the subject area. This information is not intended to be a basis for any investment decision and does not contain all the data about the project.

This document is not an offer or an invitation to sell or buy securities or any enterprises or assets indicated herein. No information set out or indicated in this document is a basis of any contract.

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Appreciation letter.

Dear Mr. Galibus,

I am writing this letter behalf of the management of MICS Wear Espana S.L. I want to appreciate you for the innovative service which helped in completing the project on time.

CREDO is an innovative and promising project for B2B-market. It has been successfully tested in international trade transactions.

Your generous contribution is a source of our success. Wishing for the bright future of both the companies.

Sincerely,
Roman Maksimov
Managing director



MARUTZZI TRAVEL AND TOURISM LLC

Letter of Appreciation

12-JUN-2017

CREDO

Dear Konstantin,

We would like to thank you for the outstanding CREDO service linked with a day-to-day financial turnover in our C2C business.

As the director and legal representative of this company I admired your work and thank you for your professionalism and your positive attitude.

Sincerely,



EVGENIA TABANAKOVA

CEO



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