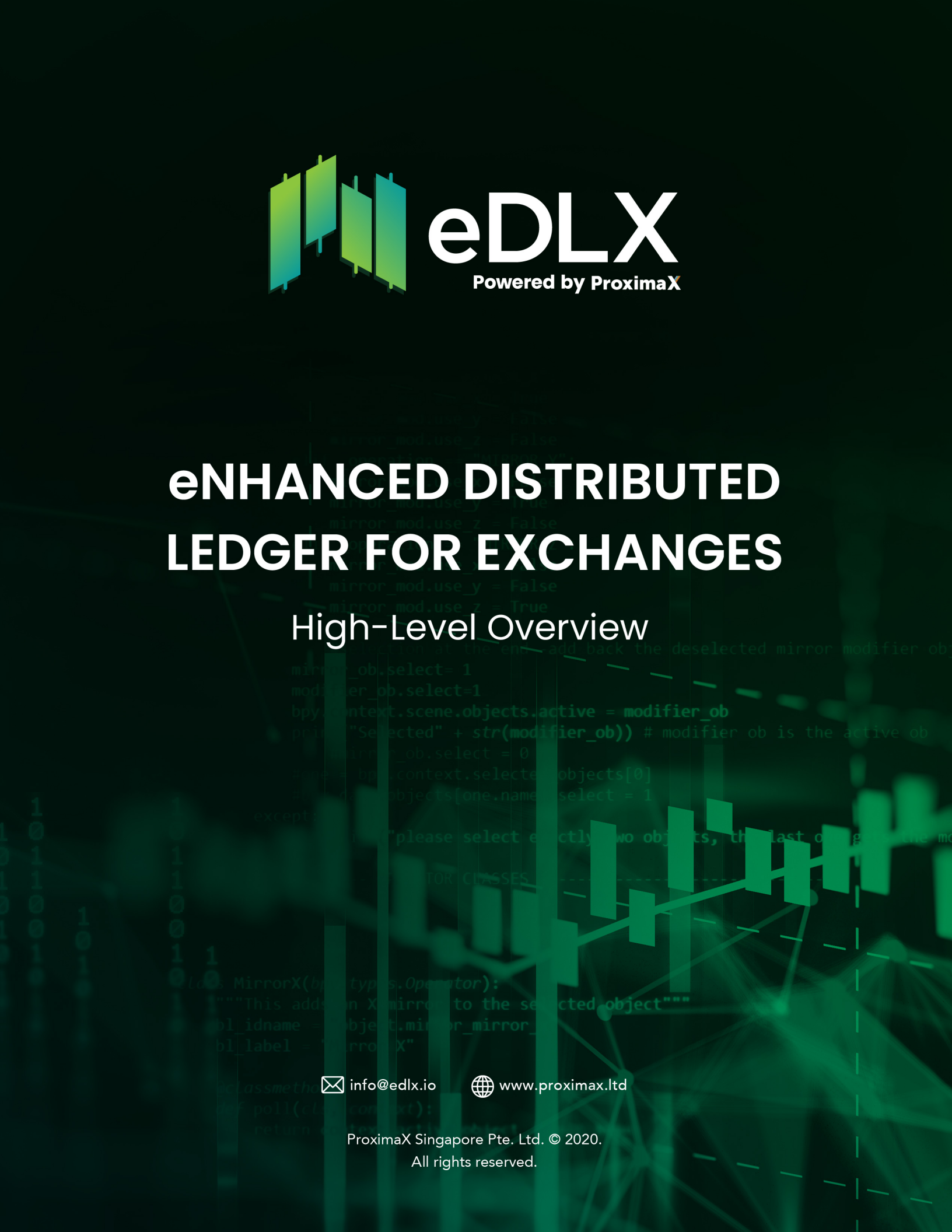


eDLX
Powered by ProximaX

eNHANCED DISTRIBUTED LEDGER FOR EXCHANGES

High-Level Overview

info@edlx.io
www.proximax.ltd

Table of Contents

1. What is eDLX?

Enhanced Distributed Ledger for eXchanges (“eDLX”) is a blockchain-powered platform for the issuance, management, depository, and secondary market trading (exchange and OTC) of regulated digital assets (including securities, bonds, real estate, and derivatives).

eDLX was built by ProximaX, a technology provider that seeks to partner with operators across the globe who have been granted a license by regulators to operate, or to work with unlicensed operators to enter and successfully exit regulatory sandboxes with a license to operate.

ProximaX’s vision is for there to be multiple eDLXs in operation in multiple jurisdictions, and that eventually these eDLXs be integrated to enable seamless crossmarket interoperability.

As of March 2020, ProximaX has completed version one of its eDLX platform, and is actively working with partners in different jurisdictions to launch eDLX in their respective local markets.

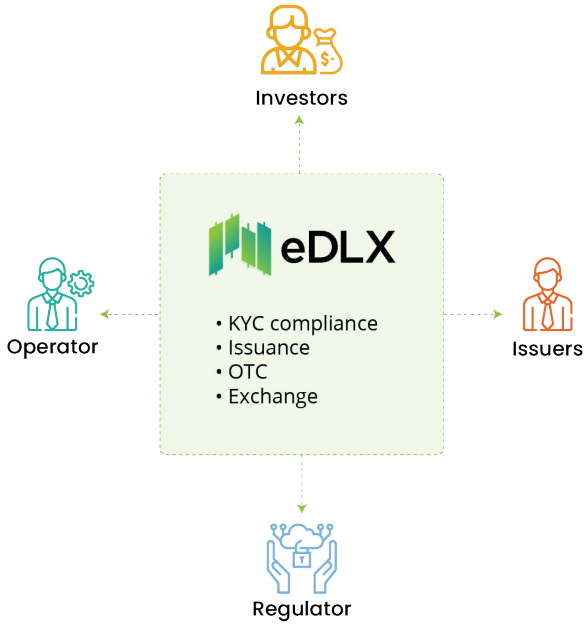


Figure 1. eDLX platform users.

2. Benefits

2.1. Benefits for Regulators

Market transparency

Regulators can more easily monitor asset ownership and movements in real-time. All transactions, such as for issuance and trading, are recorded in an immutable state on the blockchain. Capital markets are streamlined, as investors can subscribe to, hold, and trade multiple assets in one platform where there are instantaneous transactions and settlements. There is no need for separate accounts for asset custody, as asset owners (issuers; investors) can hold their assets in their own respective accounts. This is in contrast to current capital market systems which are highly fragmented, inefficient, and complex.

2.1. Benefits for Operators

Cost efficiency

eDLX creates a new attractive business model for capital market operators, as they can now commercialize issuance and trading of assets all within one cost efficient platform. The ease and speed in which different assets can be digitalized and traded in turn can attract a broader range of customers, expand asset classes, and unlock capital.

Regulatory Compliance

eDLX operators have access to a blockchain-powered Know Your Counterparty ("KYC") module where forms and workflows can be customised according to in-scope rules (see section 3.8.). The platform's Supercontracts (commonly known

otherwise as smart contracts) can automate the execution of business logic in accordance with regulatory rules (see section 3.11.)

Technology Risk Management

The blockchain provides in-built encryption and cryptography to ensure the secure handling of digital assets. The platform is integrated with a blockchain-powered digital identity system that safeguards online interactions, such as access to the eDLX platform and the authorized signing of transactions (see section 3.9.). Sensitive KYC records are stored in a practically unhackable distributed file management system, where data is sharded ("broken into pieces"), each piece is encrypted, and distributed across multiple storage nodes (see section 4.1.).

2.3. Benefits for Issuers

Fast capital raising

eDLX reduces capital raising costs, as issuers no longer need to be heavily reliant on intermediaries. Traditional high fee models that favor middlemen and not issuers would be significantly reduced. Issuers can connect directly with investors, and in turn spend less time fundraising and more time growing their business. This can open up the capital markets, especially for small and medium-sized enterprises ("SMEs").

2.4. Benefits for Investors

Fractional ownership

With the streamlining of the capital market's infrastructure, and the ability to break assets into smaller fractions (up to six decimal places), more opportunities are now created where investors with lesser income can now invest in these smaller fraction assets. For example,

eDLX could open up the private capital market space and real estate investment with lower entry cost. In eDLX's secondary market (exchange and OTC), investors have the option of investing into assets with even smaller fractions.

Hitherto, international investors are usually required to have a certain level of wealth and income in order to invest in foreign capital markets. The general rationale for this was to protect the international public from putting too much of their savings into these capital markets, with the assumption that the lesser income group is less likely to be informed about global capital market investments and therefore more likely to lose their hard-earned money. However, with the availability of so much information online today, the lesser income group is able to make informed investment decisions. Fractional investment opens up the opportunity for this group to now invest in smaller amounts, according to their risk appetite.

Further, the high cost of transactions in traditional systems makes it hard for operators to allow for smaller investments as the cost is the same regardless of the value of an investment.

The use of the eDLX solution as a platform for the primary and secondary markets is therefore more inclusive for people of lower income groups to buy and trade in fractional assets.

3. Features

3.1. Asset creation

Any type of asset can be created on the blockchain by an issuer upon approval by the eDLX operator and/or regulator.

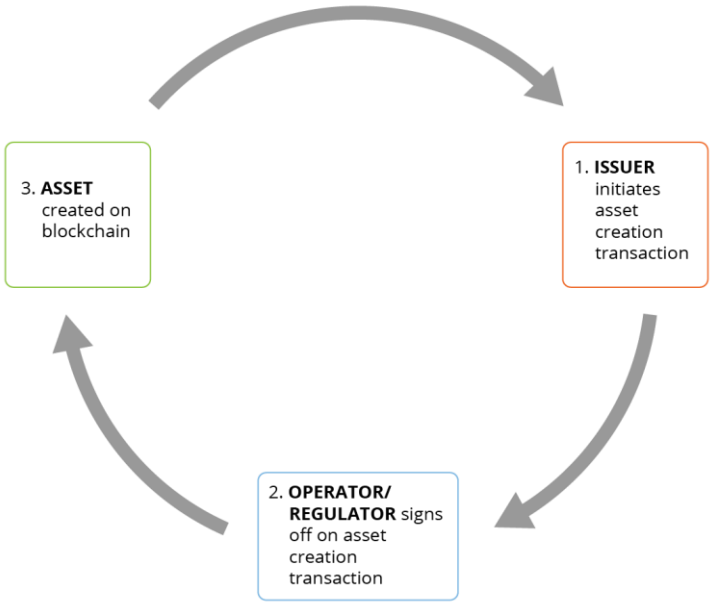


Figure 2. Asset creation process.

The issuer needs to predetermine the following properties for creation:

- Asset type
- Asset code (ticker)
- Asset name
- Total asset amount
- Decimal precision (up to six decimal places)
- Description

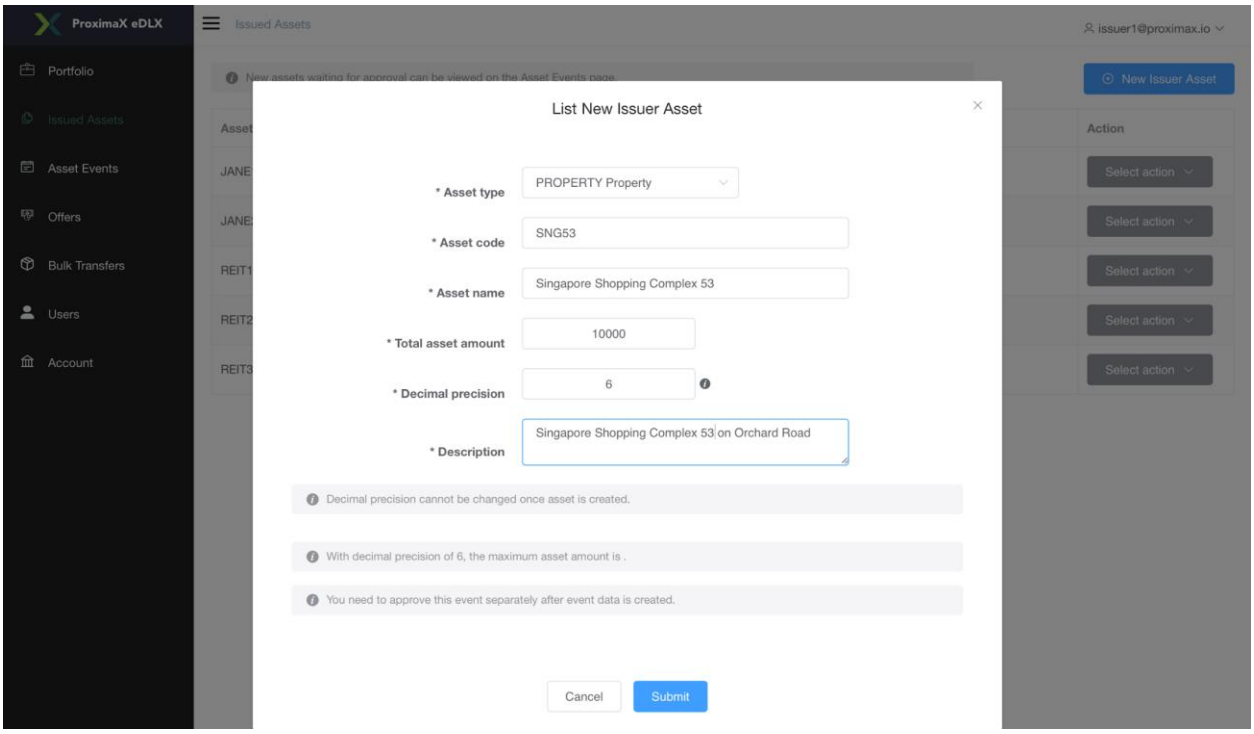


Figure 3. Asset creation screenshot.

3.2. Issuance

Issuance of security is a process whereby a fixed number of security is decided and approved by a regulator in advance. A public offering is then made. During a public offering, all investors must already have gone through a KYC process - where they are classified as accredited investors - before they can subscribe to this newly issued security.

With eDLX, whether it is a digital security or other type of digital asset, a Supercontract can be created to automatically distribute to investors the asset at the end of the subscription period. Alternatively, the asset can be distributed manually through a workflow process where a list of approved subscribers will be made for a single bulk transaction.

The asset issuance needs to be signed off by the eDLX operator and/or the regulator.

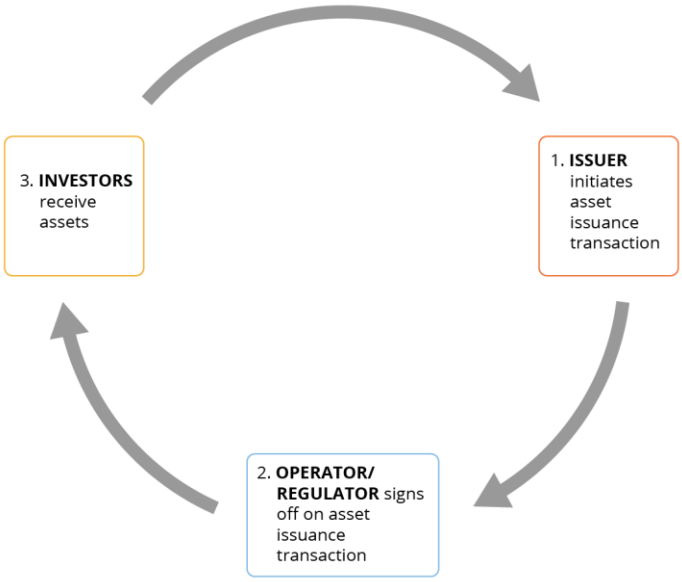


Figure 4. Issuance process.

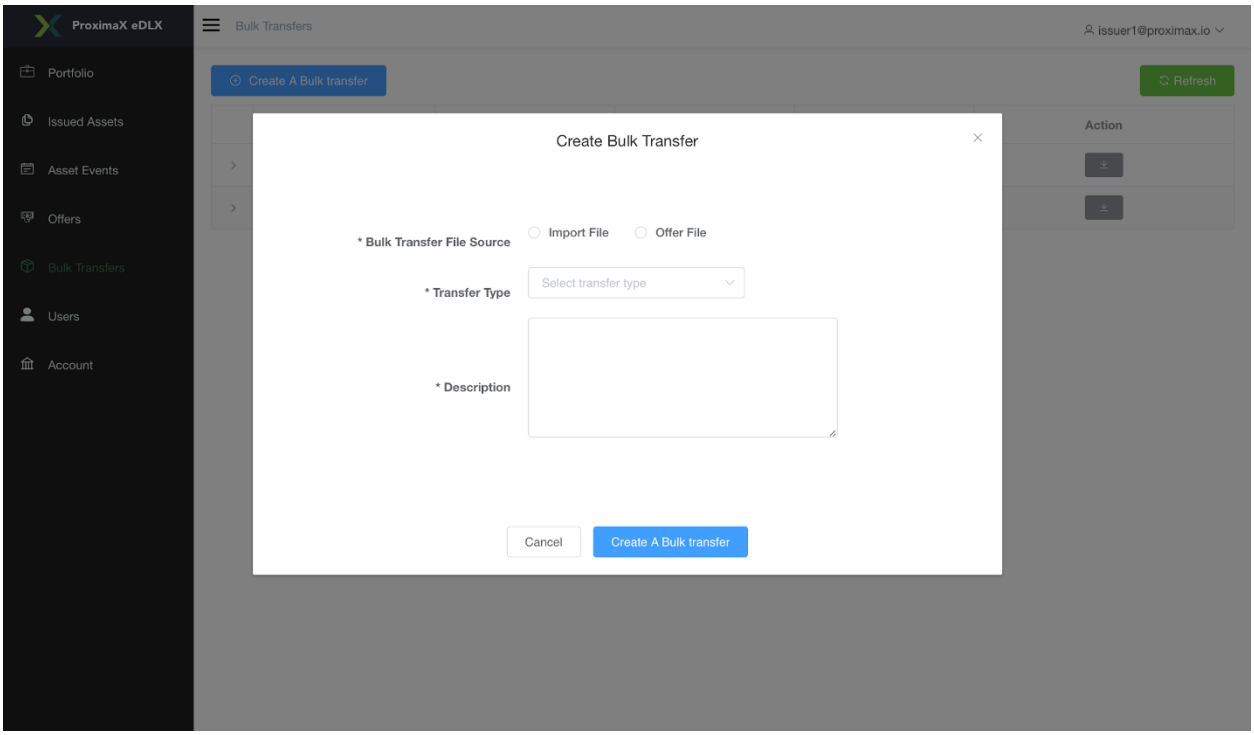


Figure 5. Issuance screenshot.

3.3. Asset split, reverse split, and supply change

Issuers can split assets, reverse split, and change supply upon the approval of the eDLX operator and/or regulator.

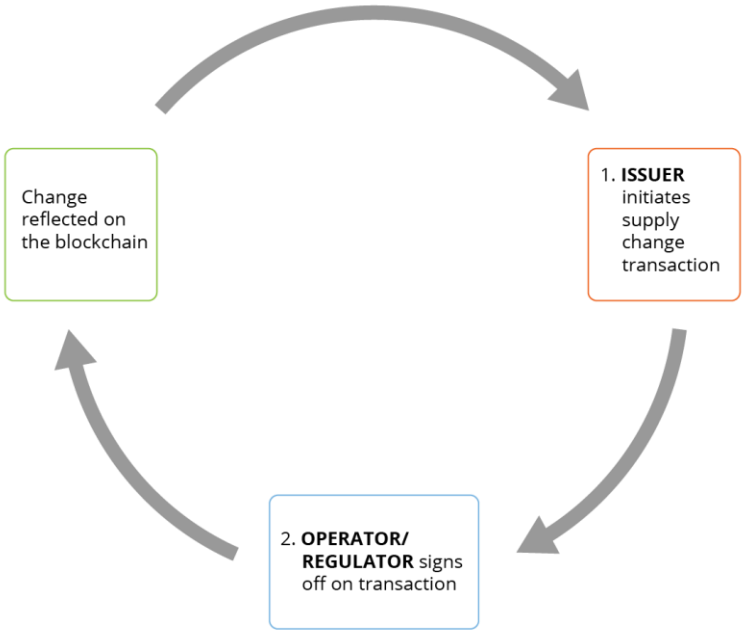


Figure 6. Asset split, reverse split, and supply change process.

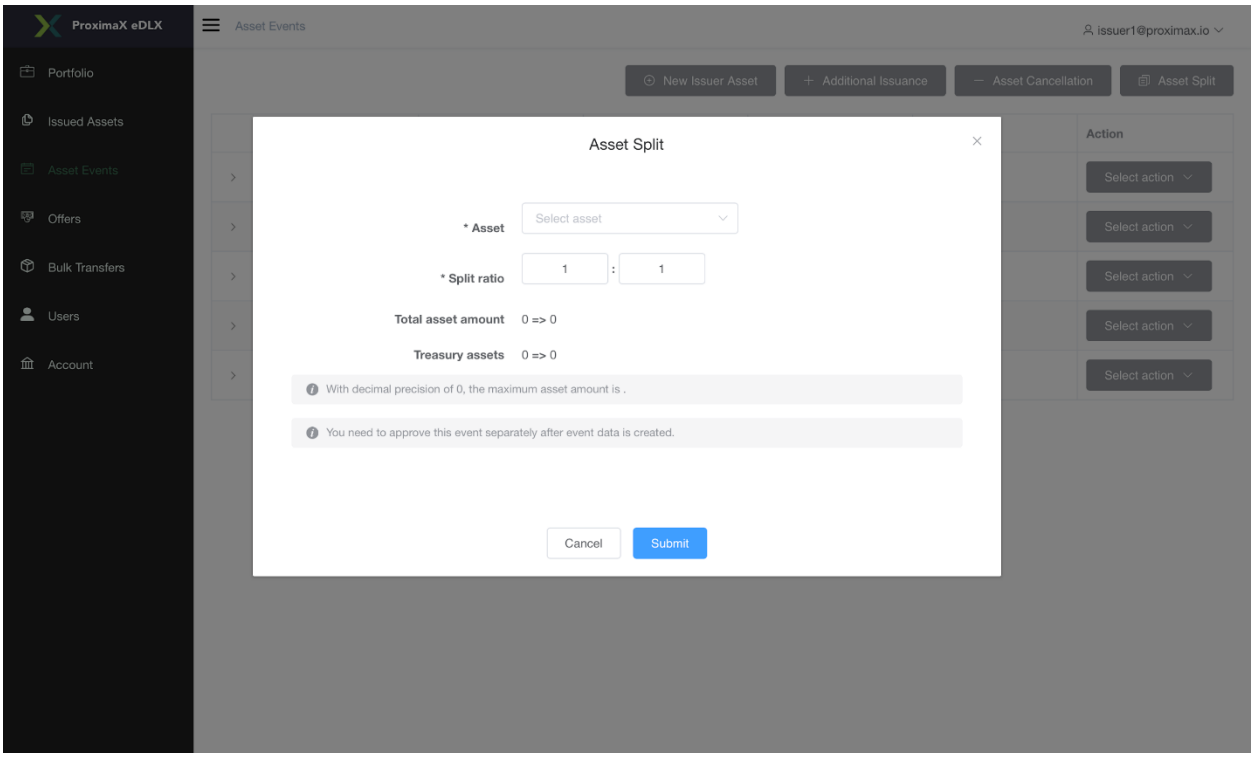


Figure 7. Asset split screenshot.

3.4. OTC trades

An investor can initiate an OTC trade transaction with another investor, for which the eDLX operator will then need to sign off. This option would happen in an off-line transaction between multiple parties agreeing to a substantial disposal of assets.

The eDLX platform is designed in such a way that there is no need to use lawyers to make comprehensive agreements and have external escrow accounts. The entire transaction happens concurrently when parties, i.e., the buyers and the sellers, together with the eDLX operator, are in agreement and sign the transaction together. When this occurs, the buyers shall receive the asset, and at the same time, the sellers will receive the money. Nothing is transacted unless all parties sign. Legal fees are therefore very much reduced to just post sale obligations rather than the transaction itself.

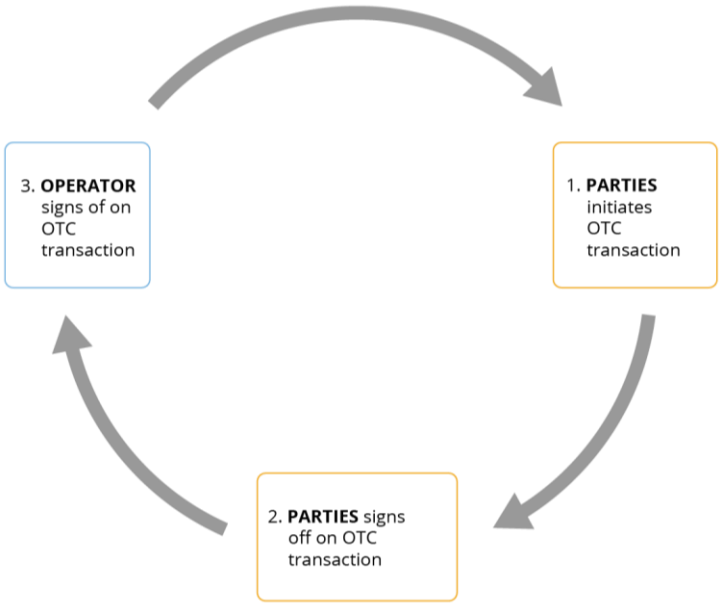


Figure 8. OTC trade process.

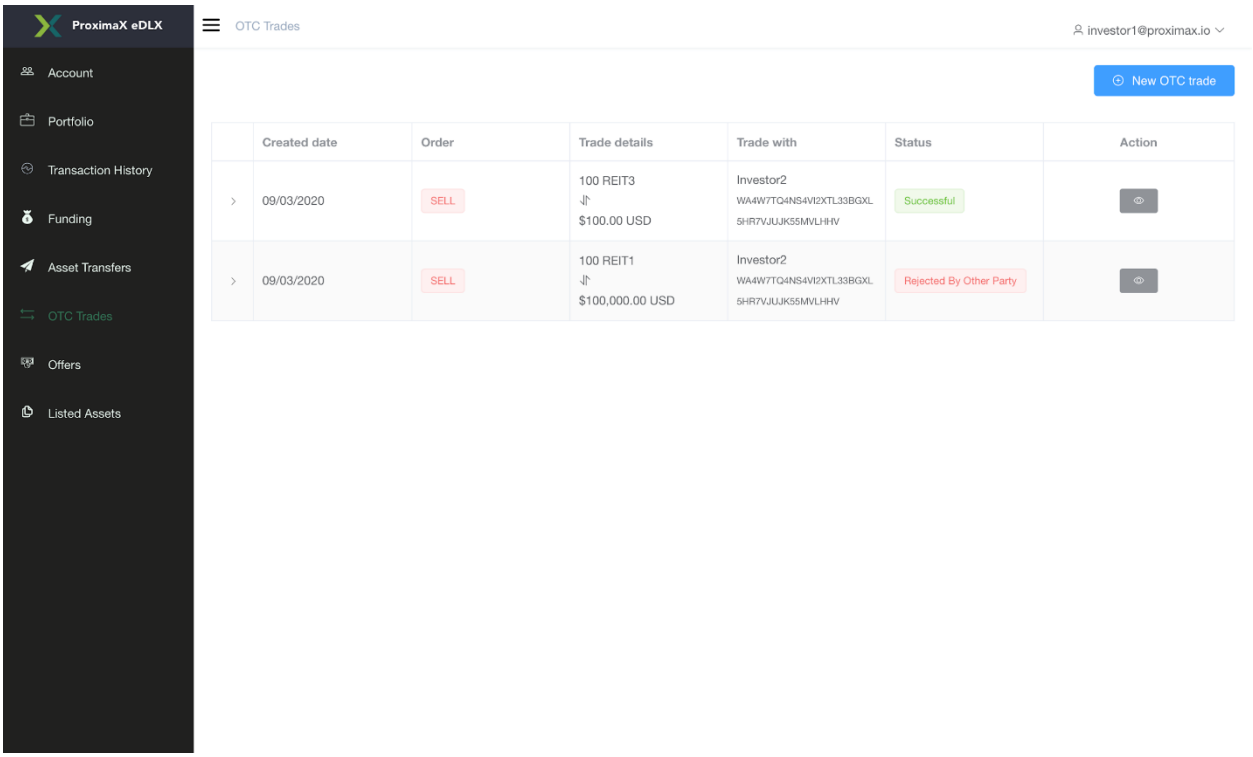


Figure 9. OTC trade screenshot.

3.5. Public offer

Issuers can create a public offer upon the regulator and the eDLX operator's approval.

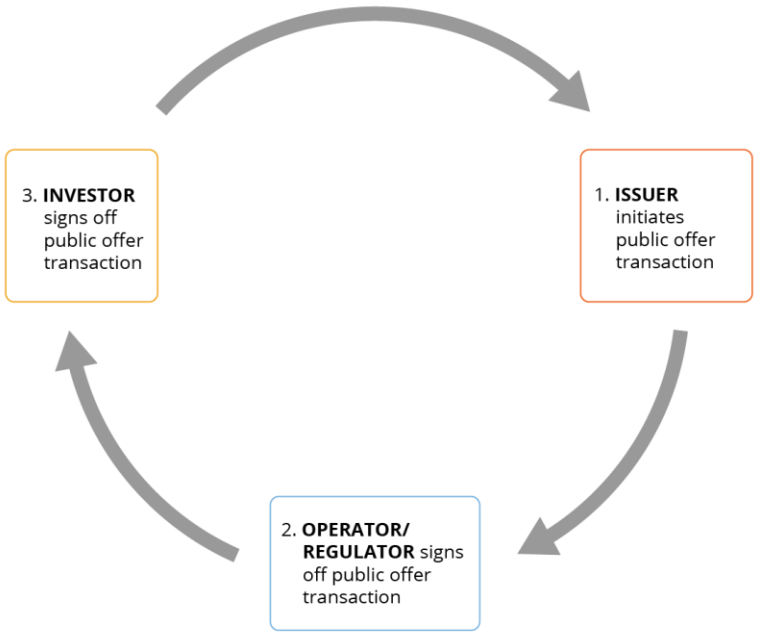


Figure 10. Public offer process.

To initiate a public offer, the issuer needs to input the following details:

- Asset to be offered
- Asset schedule (when offer open, when offer closed)
- Asset amount for sale
- Amount cap per account (maximum amount an investor can purchase)
- KYC registration form (to be completed by an investor who has not invested in any previous asset in the eDLX)
- Agreement upload form (to be completed by investor)
- Reservation duration (how long an investor can reserve the offer)

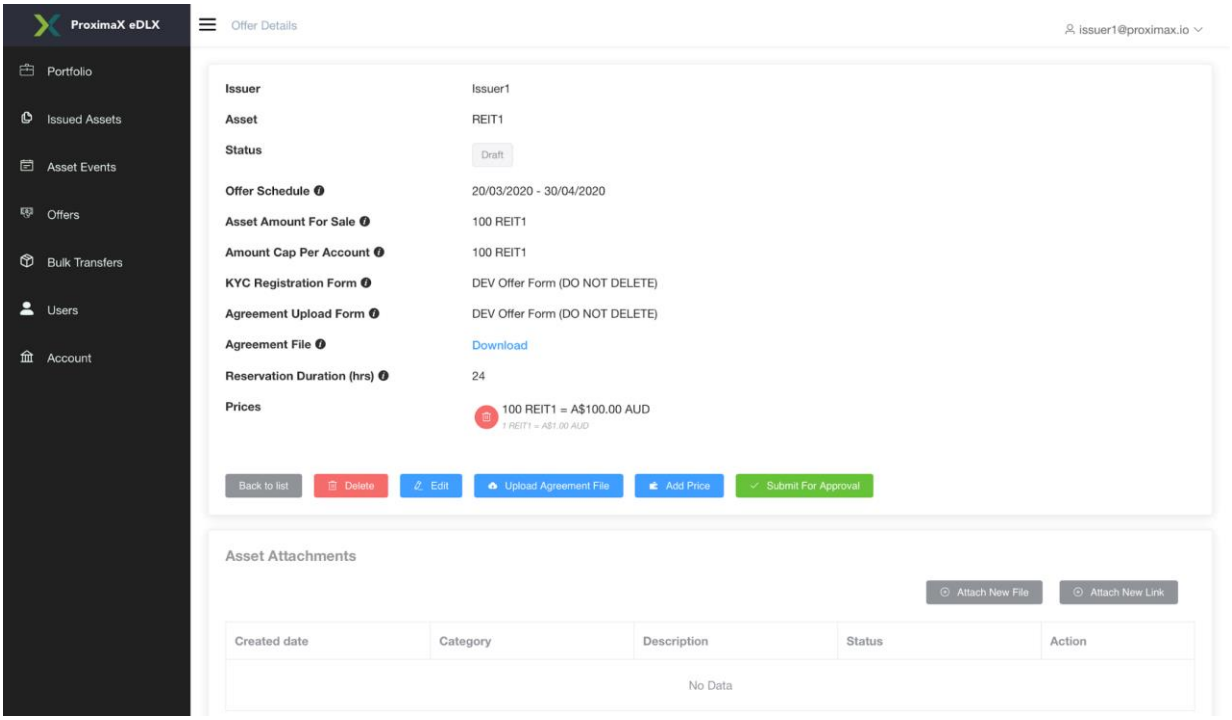


Figure 11. Public offer creation screenshot.

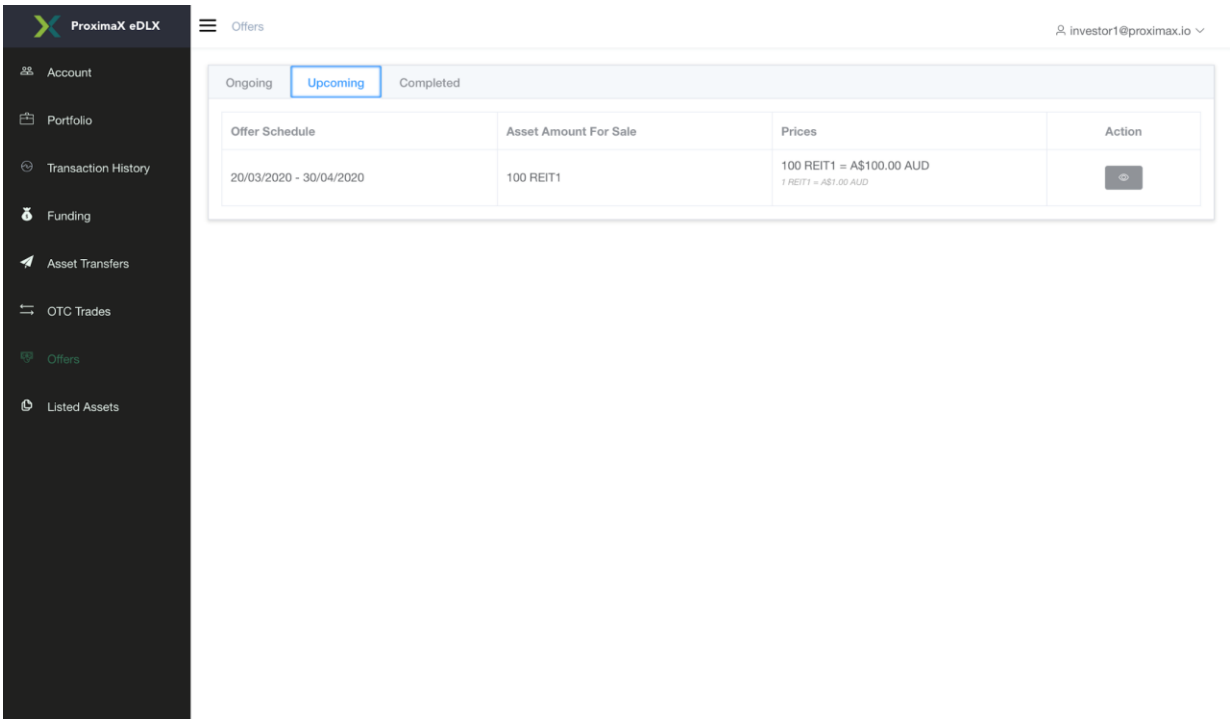
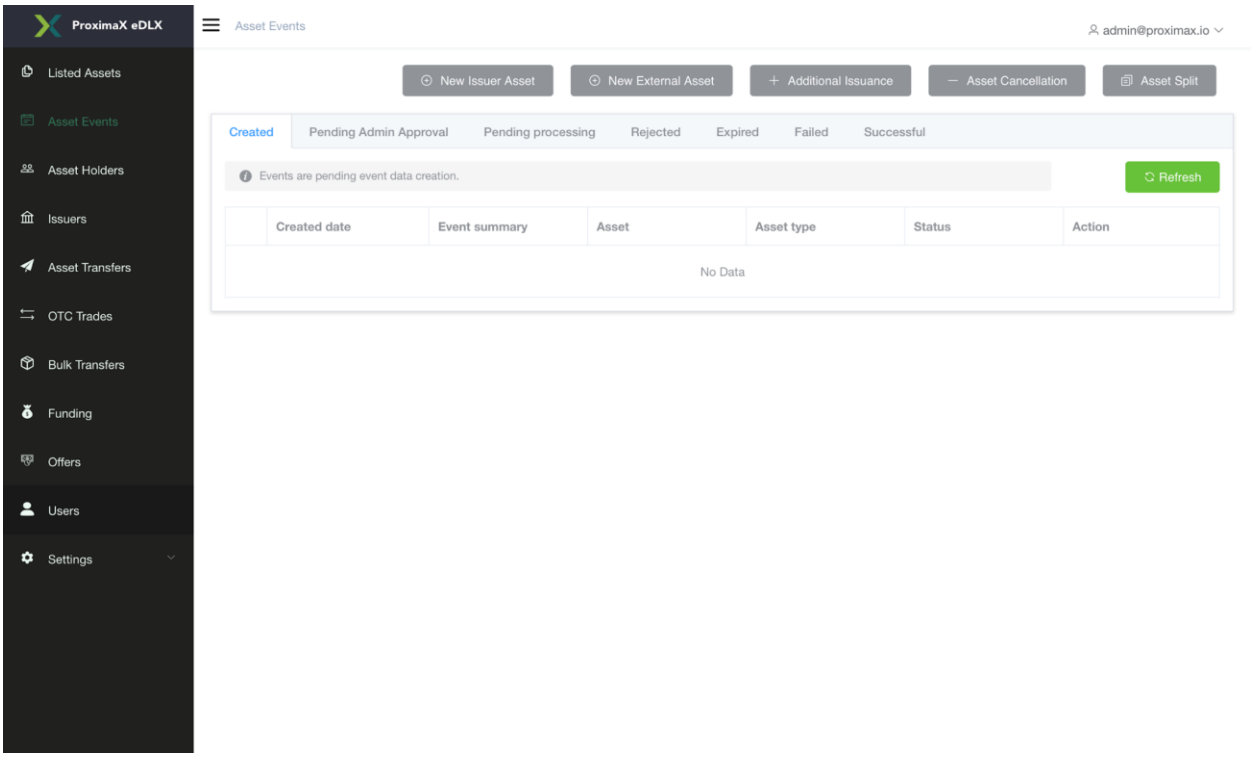


Figure 12. Available open offers screenshot.

3.6. Delisting and suspension

The eDLX operator has full control of all asset events and user access, including the ability to suspend and delist assets. As the operator has final sign off on all transactions (except trading on the exchange), it is the responsibility of the operator to ensure full compliance with in-scope regulatory rules.



Figures 13. Operator control panel screenshot.

3.7. Bank account enrolment

Investors need to enrol a bank account before they can fund their eDLX account. The bank account undergos due diligence checks via the KYC app (e.g. AML and sanctions checks). Once approved by the operator, the investor can proceed with funding their eDLX account.

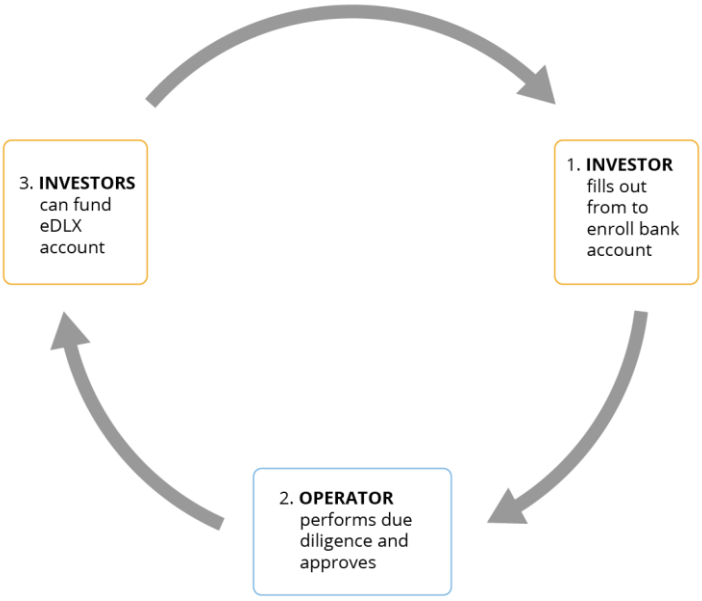


Figure 14. Bank enrollment process.

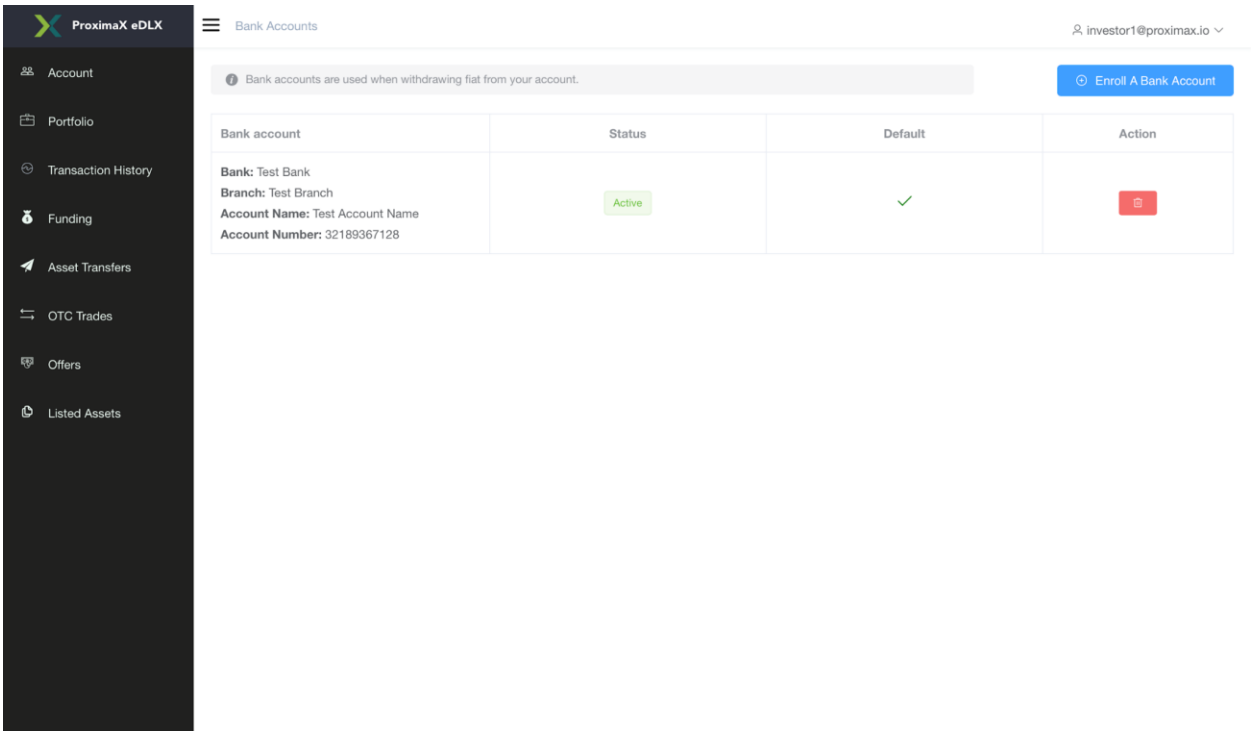
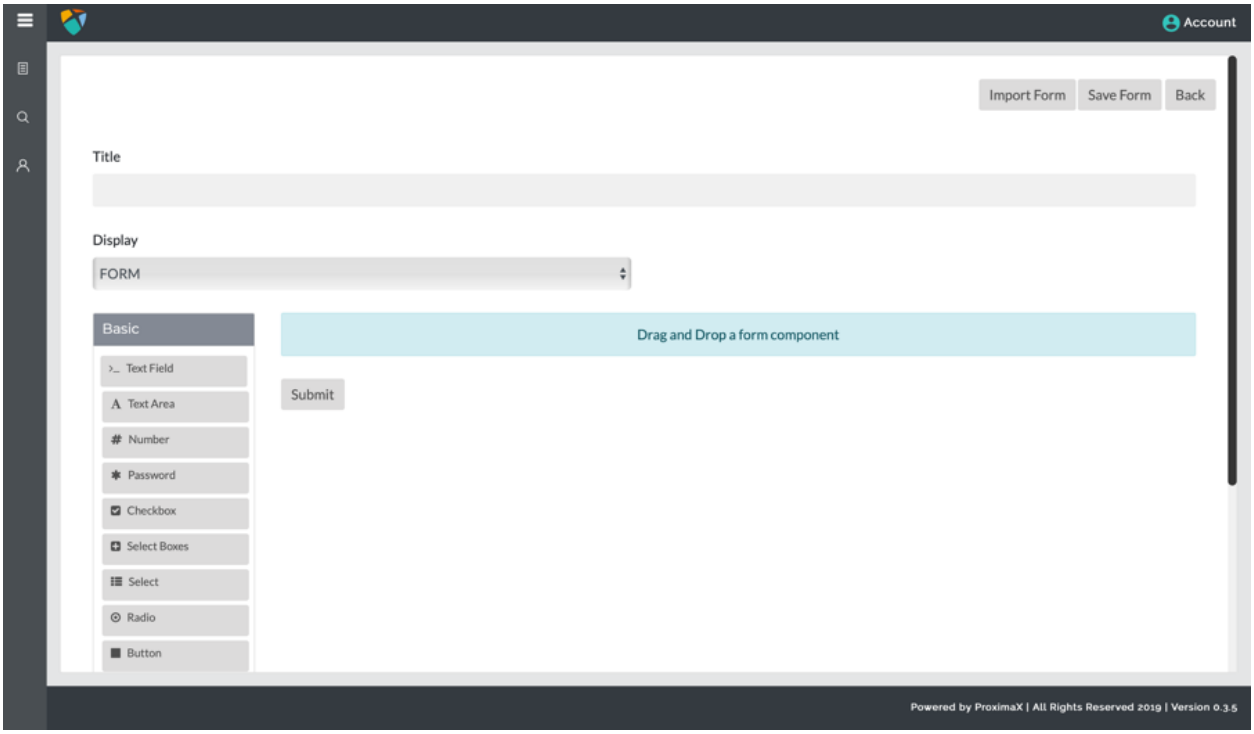


Figure 15. Bank enrollment screenshot.

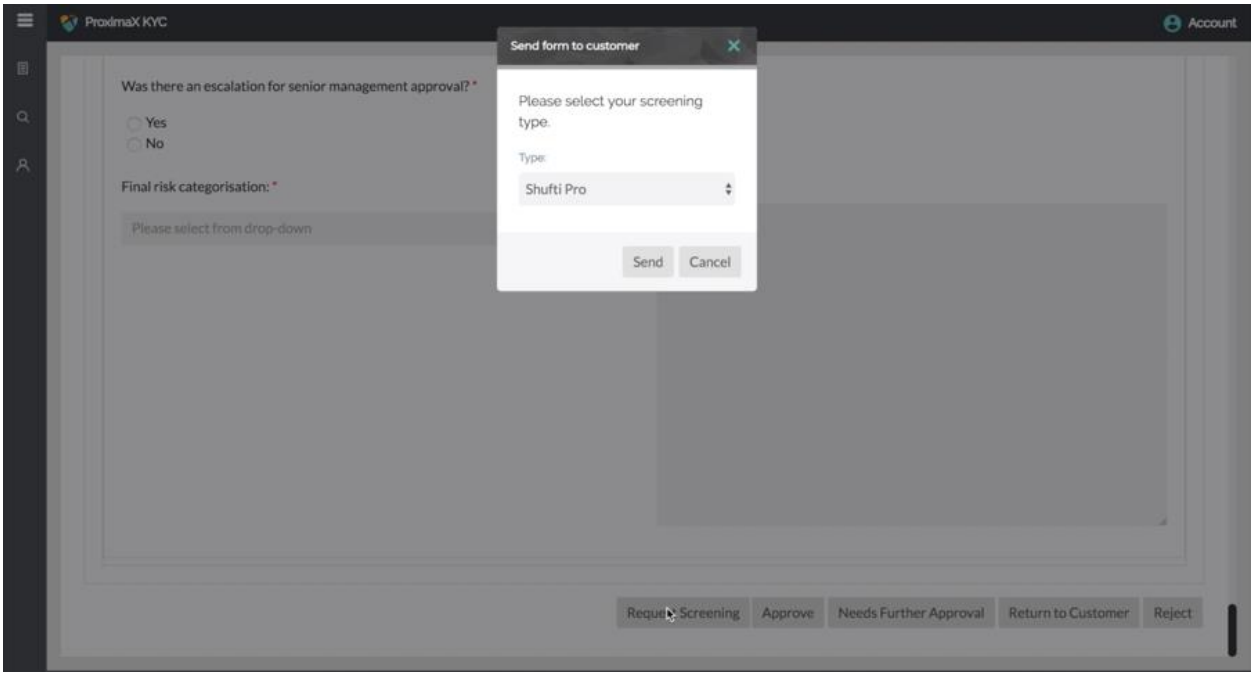
3.8. KYC app

The operator will need to ensure full compliance with all KYC rules and best practice. The app's KYC forms and process flow can be fully customized to satisfy in-scope rules.

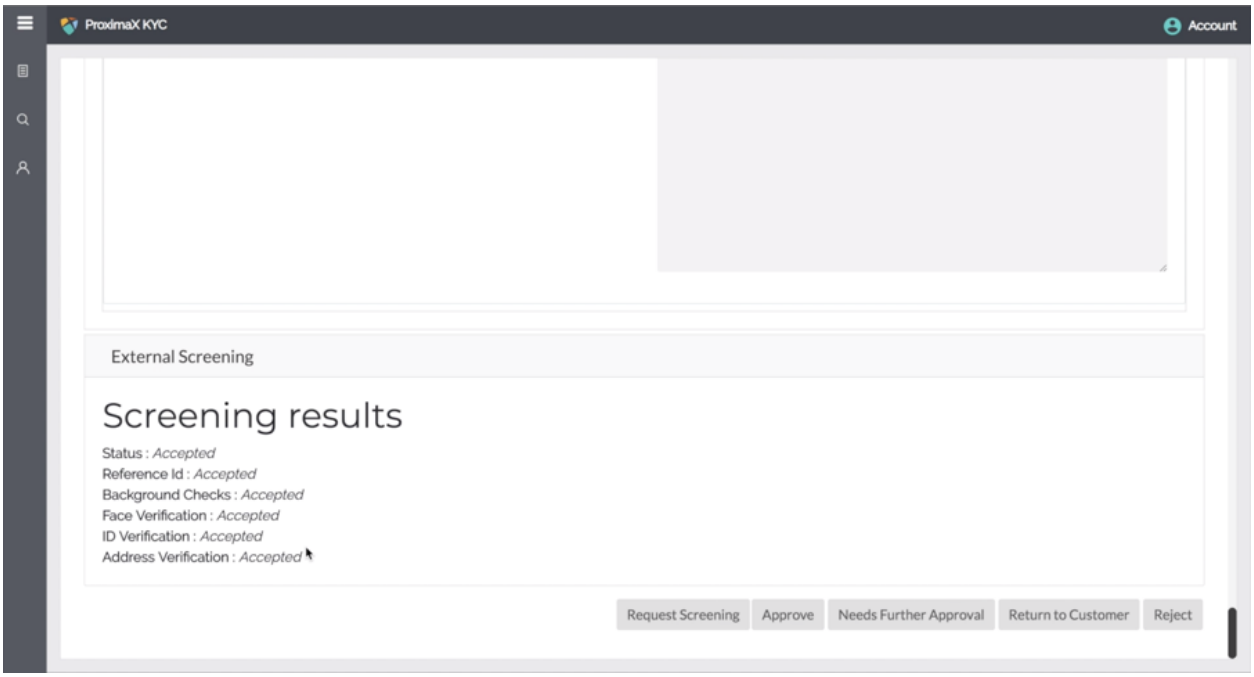


Figures 16. Form builder screenshot.

The KYC app can be integrated with third-party compliance regtech of the operator's choice (e.g. screening; facial recognition).

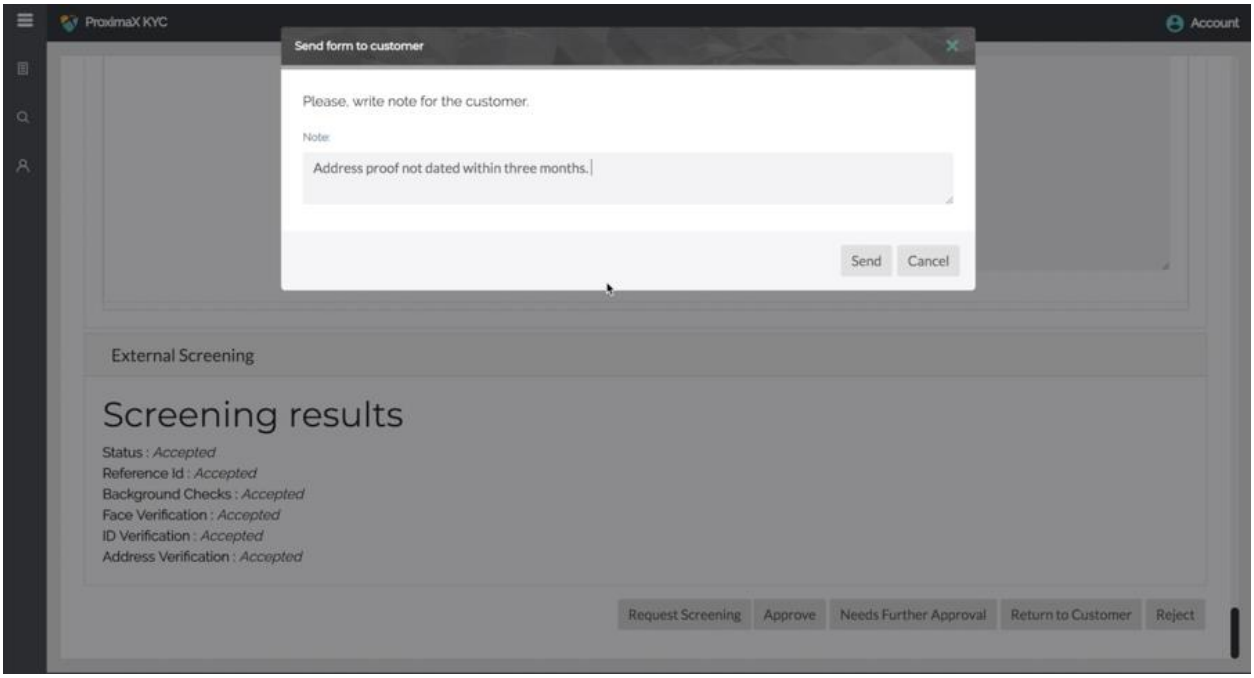


Figures 17. Risk categorization and regtech integration screenshot.



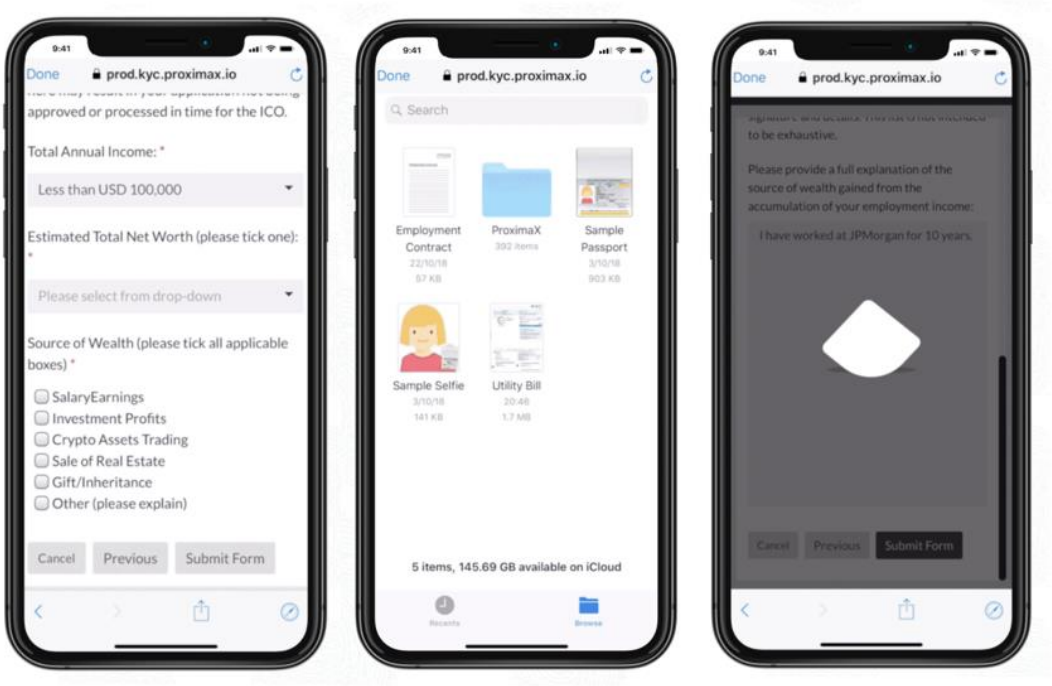
Figures 18. Screening results screenshot.

The operator can escalate due diligence forms for further internal approval and return incomplete KYC registration forms to counterparties.



Figures 19. Escalation and return to customer screenshot.

The KYC app is optimized for mobile and tablet usage for KYC submission on-the-go.



Figures 20. Mobile phone screenshot.

3.9. Digital identity (SiriusID)

All eDLX users shall have a digital identity (named “SiriusID”) on the blockchain to safeguard online interactions. A “KYC-approved” credential is attached to a user’s SiriusID to grant the ability to access the eDLX platform and sign off on trade transactions. If the operator removes a user’s credential (e.g. due to expired KYC, or a positive hit from ongoing screening), the user’s access is suspended.

Figure 21. SiriusID screenshot.

3.10. Exchange

The eDLX platform comes with an integrated exchange for secondary trading. Here, investors can buy and sell their assets in smaller numbers including in fractions.

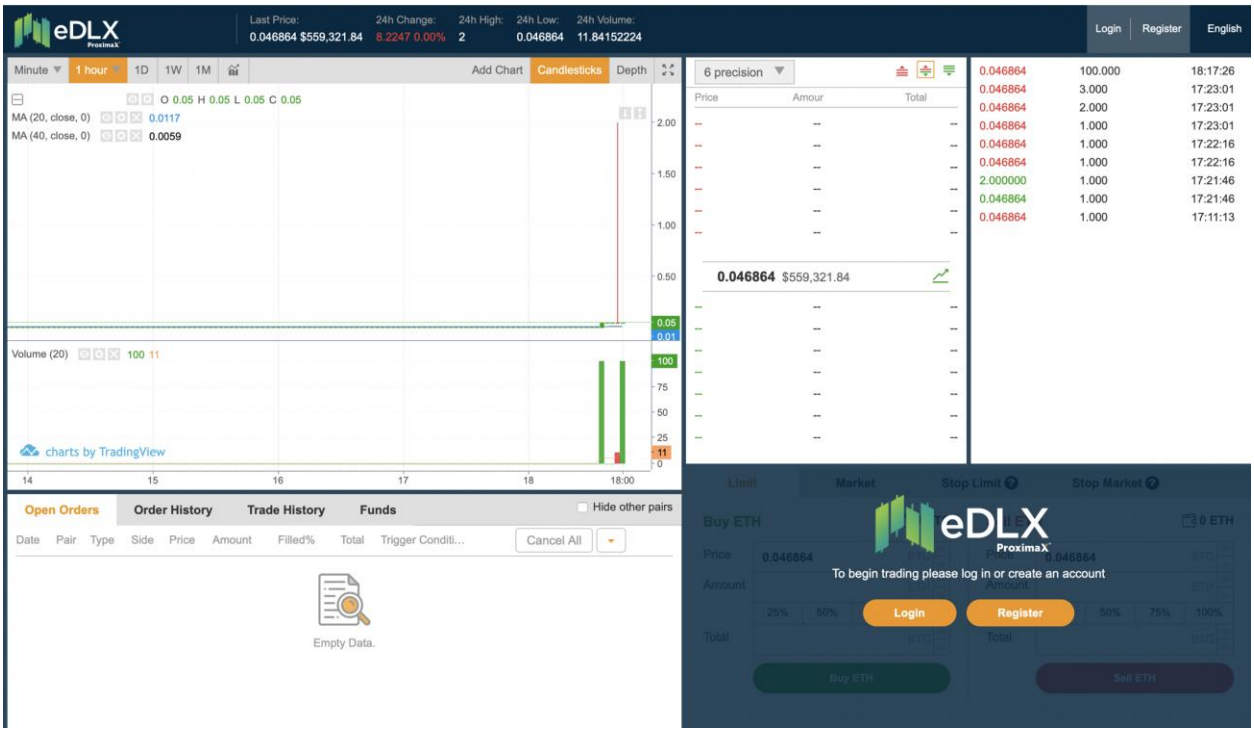


Figure 22. Exchange screenshot.

Upon exchange trading consolidation, which can happen multiple times a day, investor holdings are recorded on the blockchain, and updated in the investor's eDLX portfolio panel.

The exchange also allows for high frequency trading as well as automated bot trading. Only investors that are accredited via a KYC process can trade in the exchange.

Any other exchange can join and subscribe to the eDLX, provided they meet the requirements of the operator and regulators.

In this case, the external exchange can connect to the eDLX exchange and push through bids from their customers, thereby increasing the liquidity of digital assets. When an external exchange is linked to the eDLX exchange, this external exchange is treated like a broking house and has only one account with the eDLX exchange to buy and sell digital assets for all its customers. It essentially acts as a nominee account holder for all its customers. The broker's end-customers would need to pass all compliance and regulatory

requirements in line with those issued by the regulator where the eDLX operator is licensed.

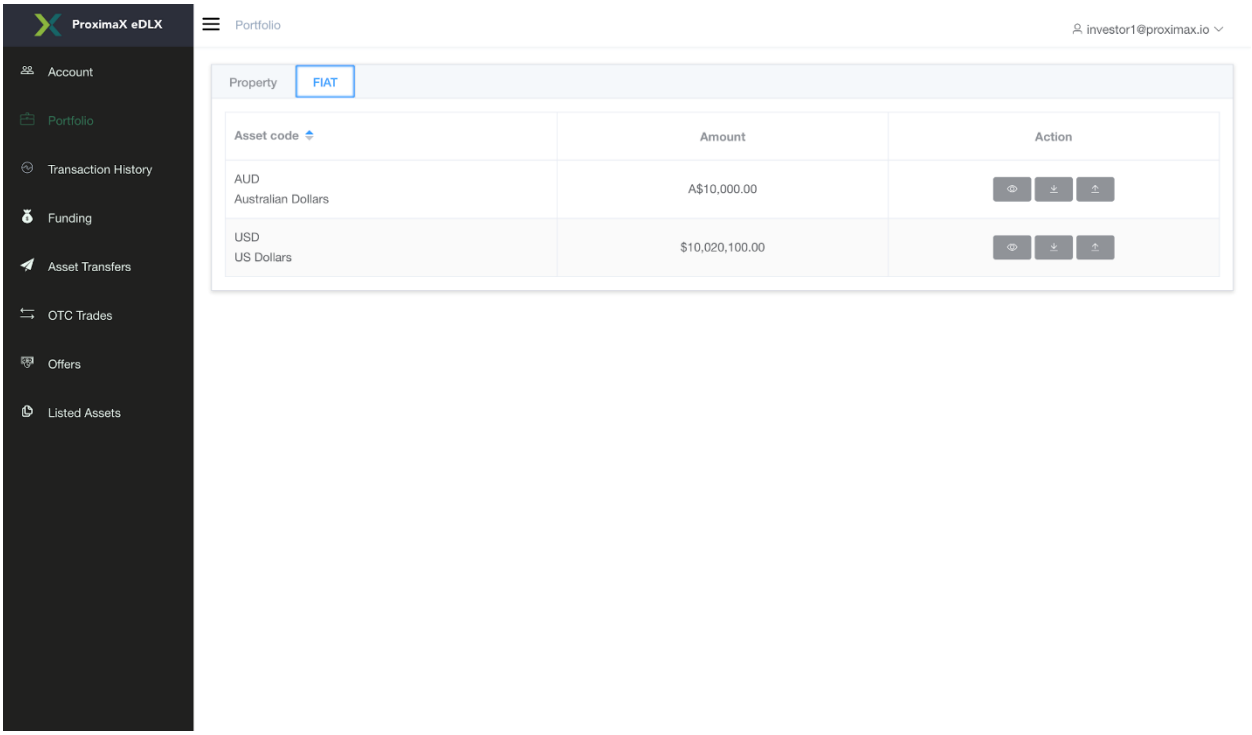


Figure 23. Investor's portfolio panel.

3.11. Supercontracts (Smart contracts)

The platform's version of smart contracts (named "Supercontracts") can automate the execution of business logic according to regulatory rules and best practice, including autosigning all transactions such as issuance, OTC, and blacklisting certain investors from transacting. ProximaX's Supercontracts technology has been developed and is ready for use. Its integration is planned for version 2 of eDLX.

Using Supercontracts, the operator via the eDLX panel will be able to categorize investors and issuers during onboarding to set automated limits (e.g. according to AML, sanctions, market abuse, moratorium, and accredited investor rules).

Investor limits:

- Up to how much they can fund their account.
- What assets they can invest and trade in.
- Suspension for unusual trading patterns.
- Suspension if change in KYC status (e.g. expired KYC documentation; positive hit from ongoing screening).
- Jurisdictional limits.
- Substantial shareholding transactions.
- Offline transactions.

Issuer limits:

- Moratorium or lockup periods for the company and its employees.
- Asset issuance and distribution.

4. How it works

4.1. ProximaX Sirius platform

eDLX is powered by the ProximaX Sirius platform.

ProximaX Sirius is a next-generation Integrated and Distributed Ledger Technology ("IADLT") infrastructure and development platform. It integrates blockchain with distributed and decentralized storage, streaming, database, and smart contracts (Supercontracts) service layers to create an all-in-one, easy-to-use platform. The platform is available as a private, public, and hybrid network configuration.

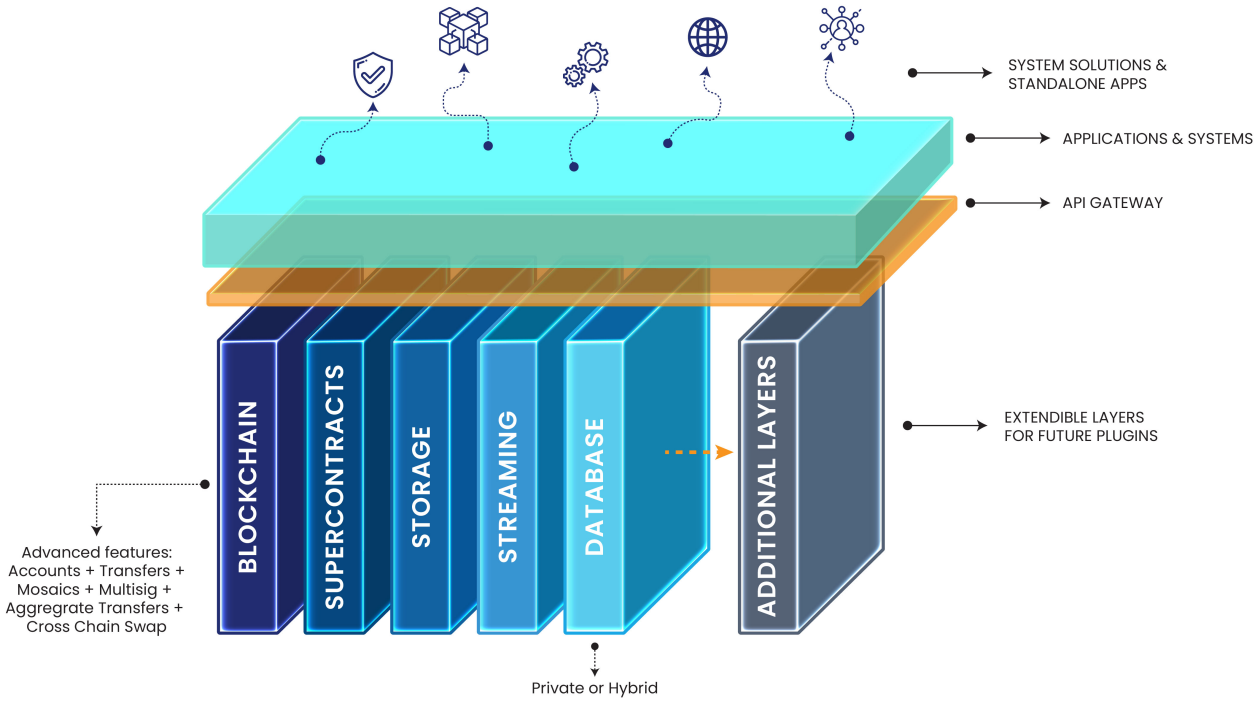


Figure 24. ProximaX Sirius platform.

By integrating the blockchain protocol with off-chain service layers in a distributed network with manageable but distinct layers, the ProximaX Sirius platform solution provides both the advantages of a blockchain-based network, and traditional centralised database solutions. It leverages inherent blockchain features while solving the conundrum in blockchain ledger transactions providing for flexibility, ease of adoption and integration, security and speed, and cost-efficiency all packaged within one extensive framework.

Users and developers can store and stream data of large sizes in the distributed service layers whilst transactions are conducted with speed on the blockchain to ensure security, transparency, immutability, irreversibility, and traceability. ProximaX Sirius greatly expands and facilitates use cases beyond what traditional blockchain projects can do, particularly for enterprise clients.

4.2. eDLX platform

The eDLX platform is integrated vertically on top of the ProximaX Sirius platform. eDLX consists of multiple integrated subcomponents:

1. eDLX Main Panel
2. eDLX Exchange
3. ProximaX KYC App
4. ProximaX SiriusID (digital identity)

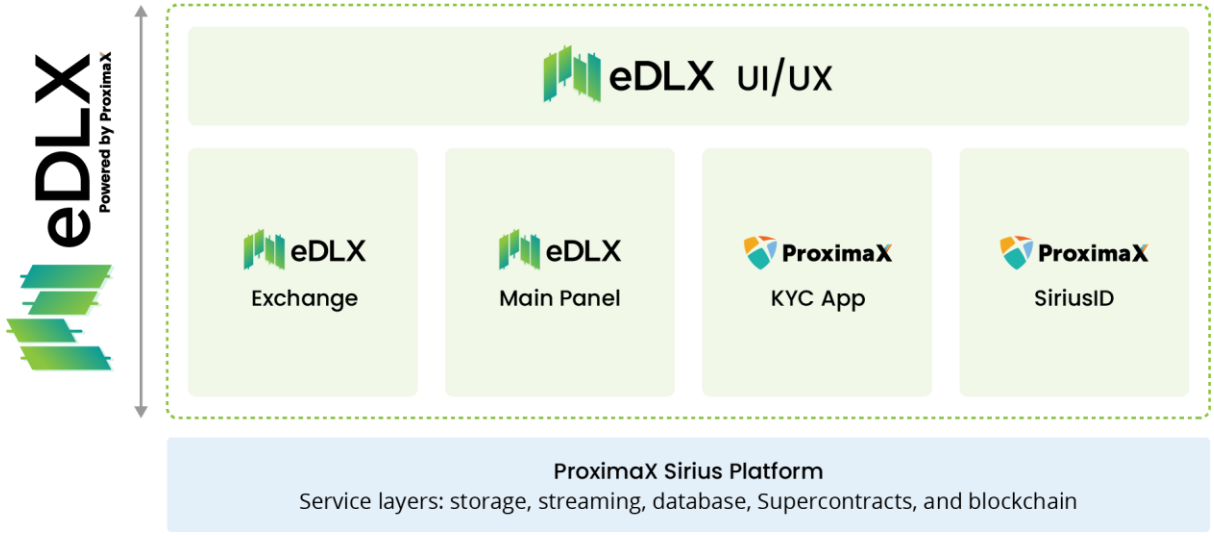


Figure 25. eDLX platform.

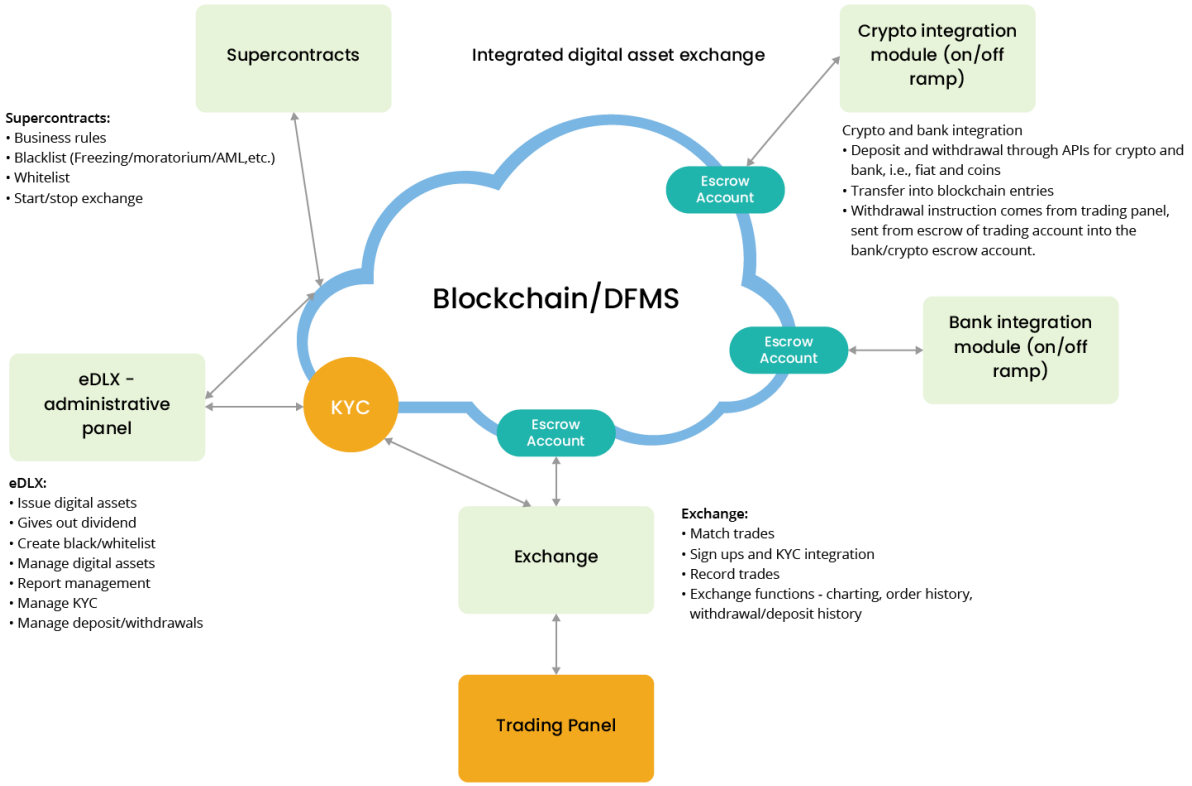


Figure 26. eDLX high-level design and features.