

# Security Token Offering Platform Functionality

This document includes a description of user stories for the Security Token Offering Platform and describes roles and actions of both users and administrators in the system. A detailed description of user stories with acceptance criteria can be found in the full specification, TokenD functionality in User Stories (EN).

Note: TokenD is a white-label framework which is used as an underlying architectural solution for the described STO platform to have it built fast (6 weeks) and for a price generally decreased by a factor of 3x. Brief description of the terms and functionality can be found in the following two-pager document.

#### Roles

The set of roles available in the system is configured during system deployment. By default, the following roles are available:

- Platform owner. Note: technically this role can perform other roles such as the role of a platform administrator
- Administrators
  - Platform administrator
- Users
  - Unverified
  - Verified
  - Corporate

User and administrator roles can be configured depending on the system's goals and business processes. For example, the platform administrator role can be split into and be performed by different administrators:

- o KYC/AML administrator
- Fees administrator
- Limits administrator
- Trade administrator
- Opportunity administrator



- Security administrator
- Issuance administrator

In this case, each administrator role will only have part of the super administrator's abilities. User roles can also have extended configuration depending on the business processes.

# **Requirements**

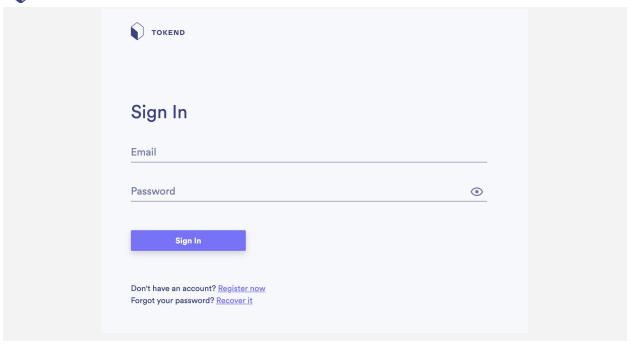
- Registration and log-in
- Deposit and withdrawal
- Tokenized assets lifecycle management
- Transactions and operation management
- Identity control and management
- Account access and management
- Application requirements
- Ledger synchronization

# **User Stories**

Note: in the following examples, TokenD is being used as a brand of a platform, but that's only for demo purposes. In reality, TokenD is not the platform but rather the framework with ready-made toolsets to build your own branded platform.

# Registration and log-in requirements

# TOKEND



# User

- As a **user**, I want to **sign up to the platform** by entering an email address and password.
- As a **user**, I want to **confirm registration** by email.
- As a **user**, I want to **sign in to the platform** by entering an email address and password.

# **Administrator**

- As an **administrator**, I want to be able to **sign up to the platform** with the ability to confirm the process using 2FA.
- As an **administrator**, I want to be able to **sign in to the platform** by entering an email address, password, and confirmation **through 2FA code**.



# **Deposit and withdrawal requirements**

# **Deposit**

# Verified user

- As a **verified user**, I want to be able to **select asset to deposit** from the list of those available for deposit.
- As a verified user, I want to be able to view asset deposit address both as text and as QR code.
- As a verified user, I want to be able to deposit cryptocurrencies and digital currencies to the platform from my accounts / addresses of other accounting systems.
- As a verified user, I want to be able to deposit assets of Stellar to the platform using my Stellar account(s)
- As a **verified user**, I want to be able to **deposit ERC20 assets of Ethereum** to the platform **using my Ethereum account(s)**.
- As a **verified user**, I want to be able to **deposit fiat currencies** onto the platform using a credit card or bank transfer.

#### Corporate user

- As a corporate user, I want to be able to select an asset to deposit from the list of ones available for depositing.
- As a **corporate user**, I want to be able to **view asset deposit address** both **as text** and **as QR code**.
- As a corporate user, I want to be able to deposit cryptocurrencies and digital currencies on the platform from my accounts / my addresses in other accounting systems.



- As a corporate user, I want to be able to deposit assets of Stellar to the platform using my Stellar account(s)
- As a corporate user, I want to be able to deposit ERC20 assets of Ethereum to the platform using my Ethereum account(s).
- As a **corporate user**, I want to be able to **deposit fiat currencies** onto the platform **using a credit card or bank transfer.**

#### Withdraw

#### Verified user

- As a verified user, I want to be able to withdraw cryptocurrencies and digital currencies on the platform to external address / account.
- As a **verified user**, I want to be able to **withdraw applicable assets** from the platform to **Stellar account**.
- As a **verified user**, I want to be able to **withdraw ERC20 assets** from the platform to **Ethereum account**.
- As a verified user, I want to be able to conduct the withdrawal of fiat currencies from the platform to a credit card or bank account.
- As verified user, I want to be able to manage the withdrawal details of cryptocurrencies, digital currencies, fiat currencies as well as to access information related to withdrawals.

#### Corporate user

- As a corporate user, I want to be able to withdraw cryptocurrencies and digital currencies on the platform to external address / account.
- As a **corporate user**, I want to be able to **withdraw applicable assets** from the platform to **Stellar account**.
- As a **corporate user**, I want to be able to **withdraw ERC20 assets** from the platform to **Ethereum account**.

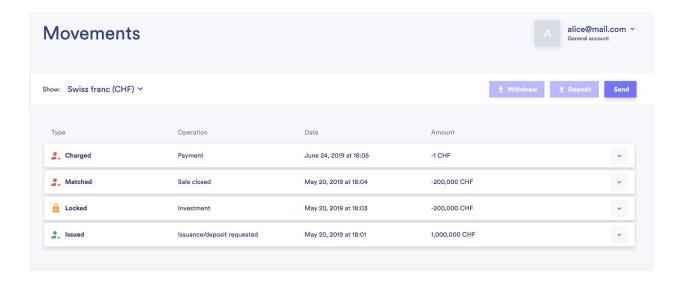


- As a corporate user, I want to be able to conduct the withdrawal of fiat currencies from the platform to a credit card or bank account.
- As corporate user, I want to be able to manage the withdrawal details of cryptocurrencies, digital currencies, fiat currencies as well as to access information related to withdrawals.

# Transactions and operation management requirements

#### User

• As a user, I want to be able to view the details of transactions associated with my account.



#### Verified user

- As a **verified user**, I want to be able to **view** the transaction details **about outcoming payments**.
- As a **verified user**, I want to be able to **view** the transaction details **about incoming payments**..
- As a verified user, I want to be able to view the details about deposit transactions.



- As a **verified user**, I want to be able to **view** the details **about withdrawal transactions**.
- As a verified user, I want to be able to view the details of transactions regarding asset selling.
- As a verified user, I want to be able to view the details of transactions regarding asset selling.

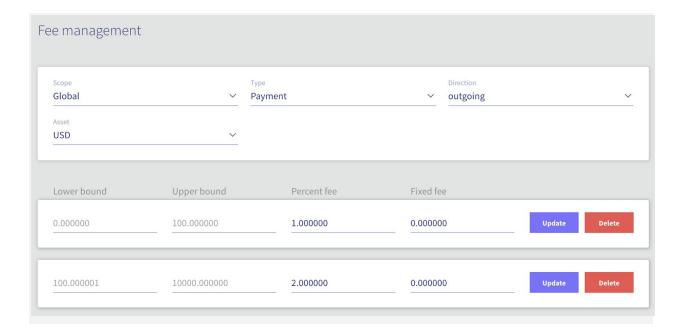
# Corporate user

• As a corporate user, I want to be able to view the history of transactions associated with a specific token offering campaign.

#### **Administrator**

# Fee requirements for administrator

• As a **fees administrator**, I want to be able to **manage details of fees related to asset trading**.



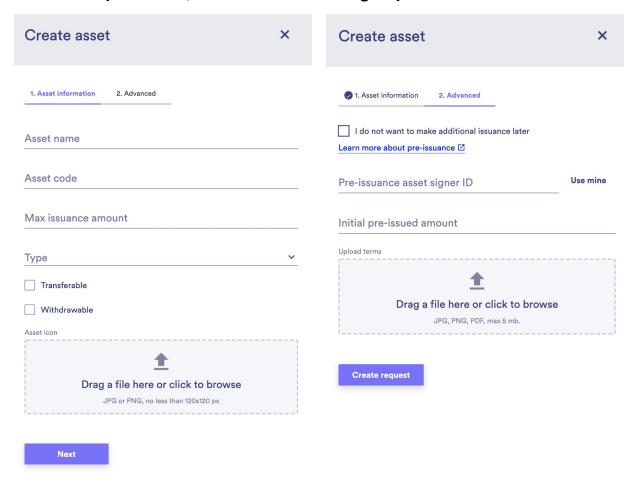


# Tokenized assets lifecycle management requirements

# **Tokenised asset creation**

# Corporate user

- As a **corporate user**, I want to be able to **create tokenized assets** on the platform.
- As a corporate user, I want to be able to manage asset pre-issuance details.
- As a **corporate user**, I want to be able to **upload pre-issuance files** to the platform.
- As a **corporate user**, I want to be able to **issue tokenized assets** to the platform.
- As a corporate user, I want to be able to configure parameters of asset issued.





- As a corporate user, I want to be able to set up a token offering campaign.
- As a corporate user, I want to be able to create whitelisted token offering campaigns, and invite specific users to participate in them.
- As a **corporate user**, I want to be able to **setup lock period** for assets distributed during **token offering campaigns**.
- As a corporate user, I want to be able to manage token offering campaign parameters.
- As a corporate user, I want to be able to configure price of assets sold during token offering campaign in the selected assets.

#### **Administrator**

# Pre-issuance requirements for administrator

• As an administrator, I want to be able to view and process requests for creating tokined assets.

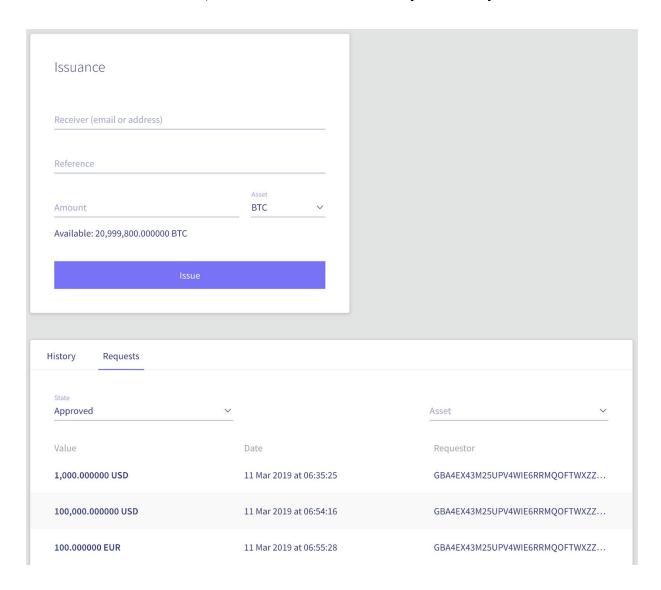


# Issuance requirements for administrator

- As an **administrator**, I want to be able to **create tokenized assets** on the platform.
- As an **administrator**, I want to be able to **setup a system asset** that can be deposited from or withdrawn to **Stellar account(s)**.



- As an administrator, I want to be able to setup a system asset that can be deposited from or withdrawn to Ethereum account(s) as ERC20 token.
- As an administrator, I want to be able to update configuration of a specific asset.
- As an administrator, I want to be able to view and process requests for issuance.

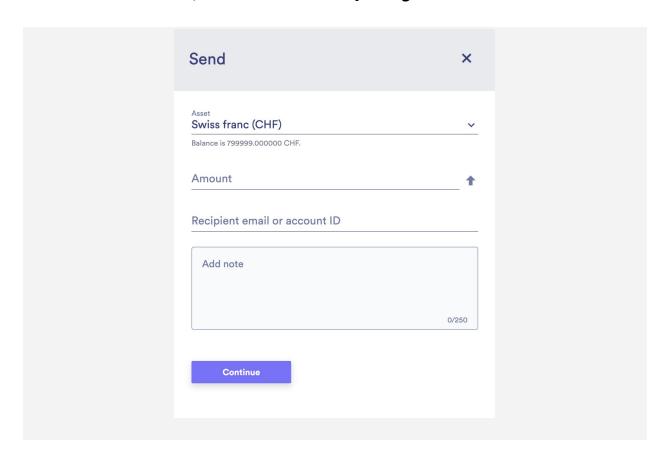


# **Tokenized assets transfer**

#### Verified user



- As a verified user, I want to be able to transfer tokenized assets to other platform users without intermediaries.
- As a verified user, I want to be able to get tokenized assets from other platform users without intermediaries.
- As a verified user, I want to be able to fully configure details of asset transfers



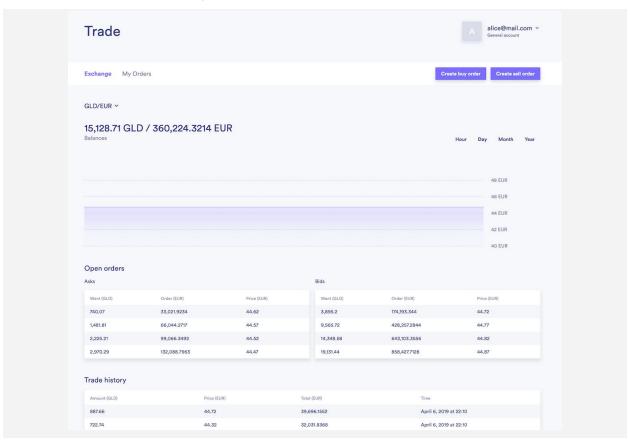
- As a **verified user**, I want to be able to **invest** in token offering campaigns.
- As a verified user, I want to be able to participate in whitelisted token offering campaigns if I am invited by its initiator.
- As a verified user, I want to be able to trade tokenized assets received via campaign on secondary market.

# Corporate user



- As a corporate user, I want to be able to transfer tokenized assets to other platform users without intermediaries.
- As a **corporate user**, I want to be able to **get tokenized assets from other platform users** without intermediaries.
- As a corporate user, I want to be able to fully configure details of asset transfers.

# **Tokenized assets trading**



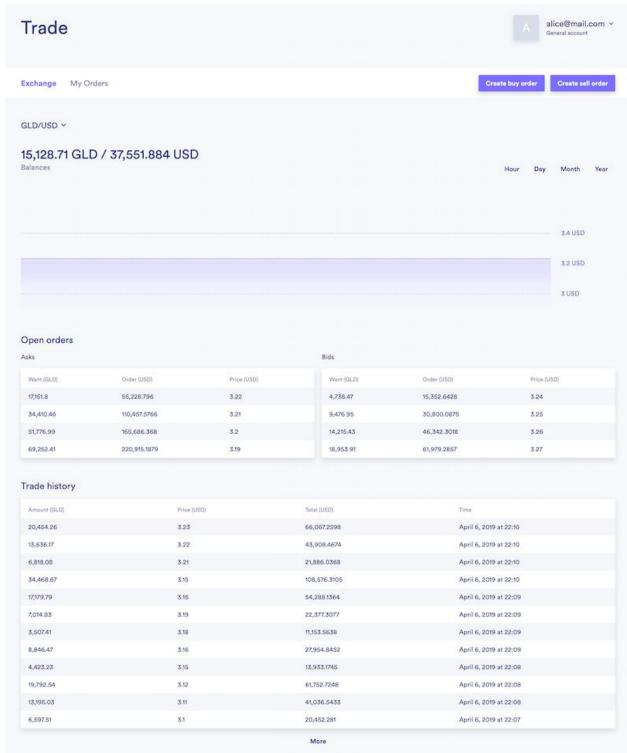
# Verified user

- As a **verified user**, I want to be able to **exchange one tokenized asset for another** without the risk of losing the first one.
- As a **verified user**, I want to be able **to trade tokenized assets** within the platform.
- As a **verified user**, I want to be able to **create orders** for buying and selling assets.



- As a **verified user**, I want to be able to **manage orders**.
- As a verified user, I want to be able to sell / buy tokenized assets for cryptocurrencies and digital currencies.
- As a verified user, I want to be able to buy / sell tokenized assets for fiat currency.



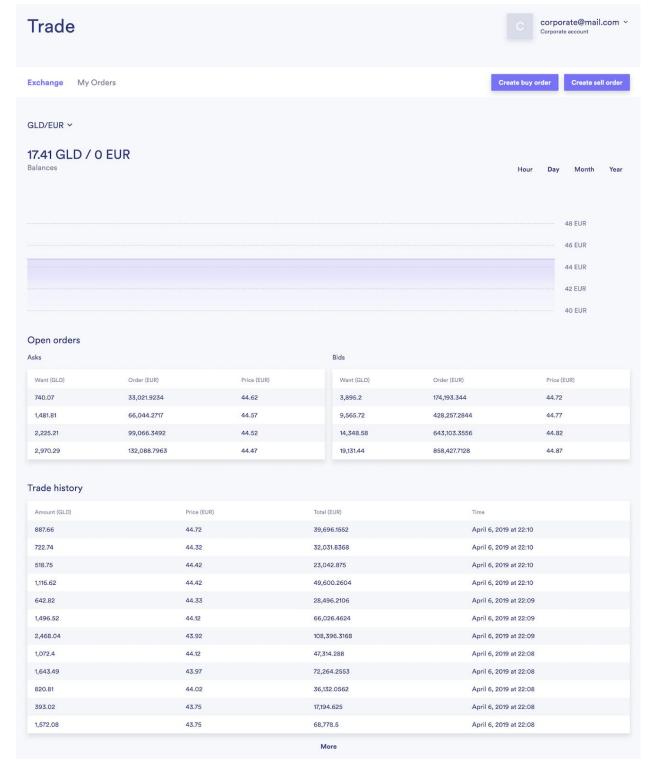


# Corporate user



- As a **corporate user**, I want to be able to **exchange one tokenized asset for another** without the risk of losing the first one.
- As a **corporate user**, I want to be able **to trade tokenized assets** within the platform.
- As a corporate user, I want to be able to create orders for buying and selling assets.
- As a corporate user, I want to be able to manage orders.
- As a corporate user, I want to be able to sell / buy tokenized assets for cryptocurrencies and digital currencies.
- As a corporate user, I want to be able to buy / sell tokenized assets for fiat currency.







# **Identity requirements**

#### User

- As a user, I want to be able to provide my KYC data to change my account permissions.
- As a user, I want to be able to current state of my request for confirming KYC data.

#### Unverified user

- As an unverified user, I want to be able to provide my KYC data to verify them and become verified user.
- As an unverified user, I want to be able to provide my KYC data to verify them and become corporate user.

#### Verified user

• As a **verified user**, I want to be able to change (update) my KYC data.

# Corporate user

• As **corporate user**, I want to be able to view and update my KYC data.

# Account management and access requirements

#### Platform owner

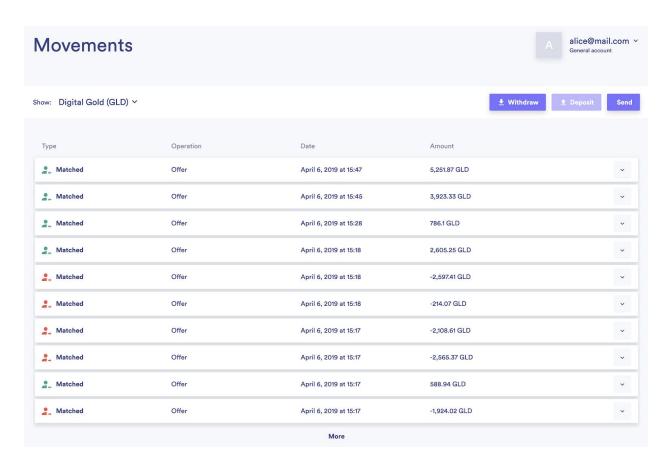
- As a platform owner, I want to be able to perform the initial configuration of the
  platform by changing the initialization scripts, namely: to configure the roles of
  users and administrators of the platform, system assets, trading pairs of assets.
- As a **platform owner**, I want to **have access to all transactions** conducted on the platform.



- As a **platform owner**, I want to be able to **setup and manage a** hot wallet for assets from the **Stellar network**.
- As a **platform owner**, I want to be able to **setup and manage a** hot wallet for ERC20 assets from the **Ethereum network**.

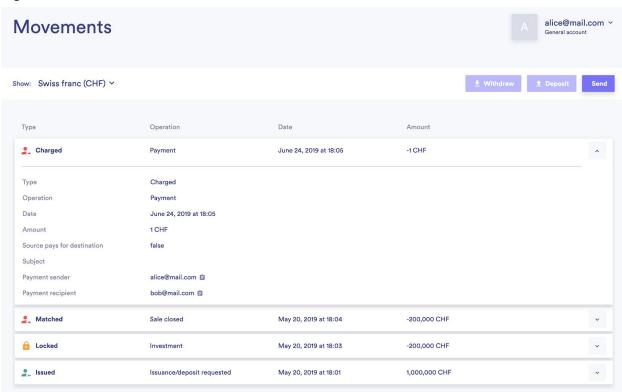
# **User (Unverified, Verified, Corporate)**

• As a user, I want to have access to all transactions associated with my account.

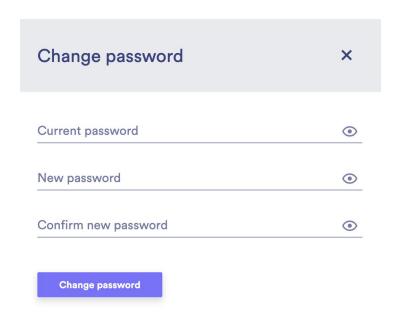


• As a user, I want to be able to view other users' account identifiers.





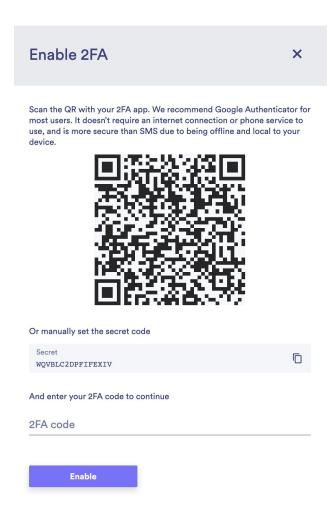
• As a **user**, I want to be able to **change the password** of my account.



 As a user, I want to be able to restore access to my account in case its password is lost.

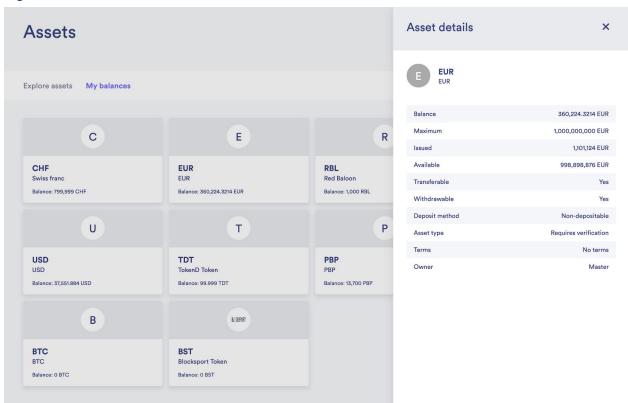


• As a **user**, I want to be able to **configure two-factor authentication** to increase account security.

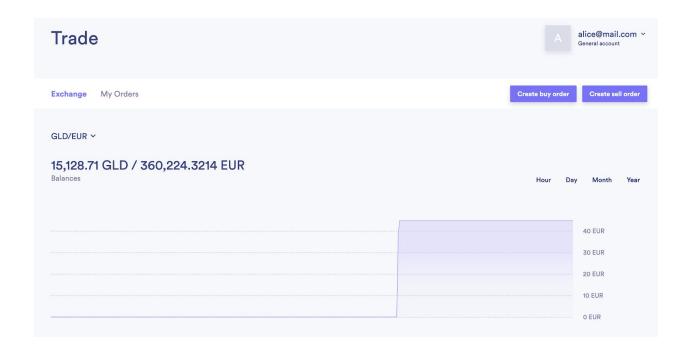


- As a **user**, I want to be able to **view the balances** of my account.
- As a user, I want to view the balances of my assets as a catalog.



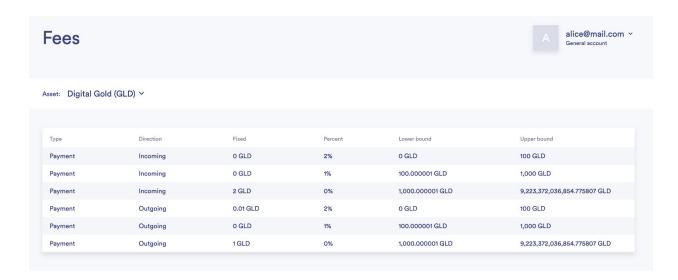


• As a **user**, I want to be able to **view trading history** as an asset ratio diagram.





- As a user, I want to be able to view the details of the fees details for my account.
- As a **user**, I want to be able to **view the fees details for a particular asset** on the platform.



• As a user, I want to be able to view the order history.



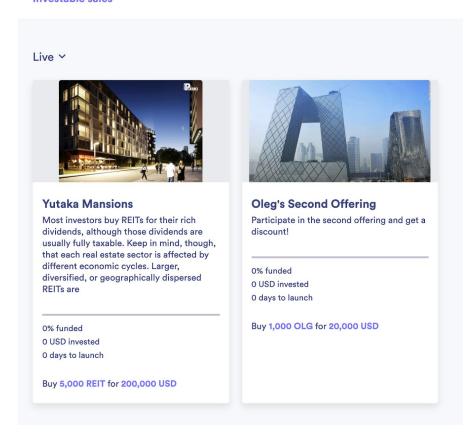
# Verified user

• As verified user, I want to view the list of ongoing token offering campaigns.



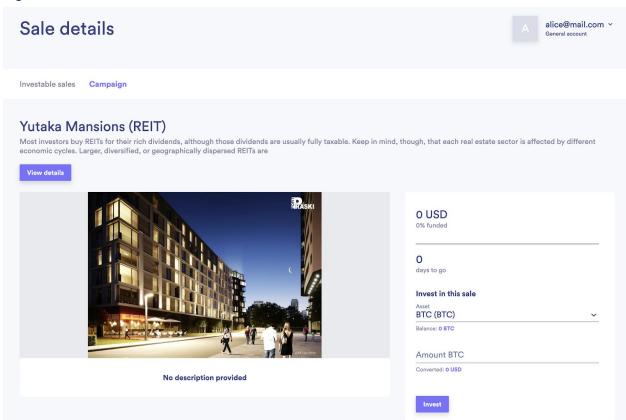
# Sales

#### Investable sales



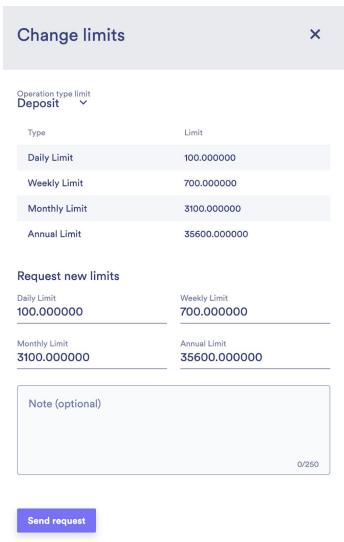
• As **verified user**, I want to be able to **view the token offering campaigns details** when they are selected.



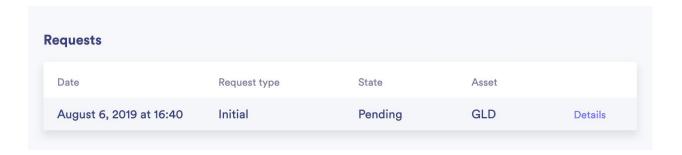


• As a **verified user**, I want to be able to **create requests for changing limits** of my account.





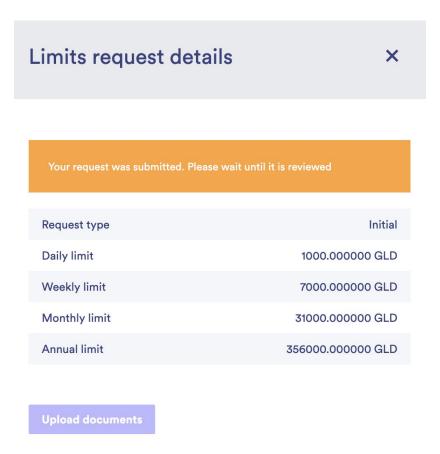
• As a **verified user**, I want to be able to view the state of the request for changing limits.



 As a verified user, I want to receive information about the documents required for changing limits.

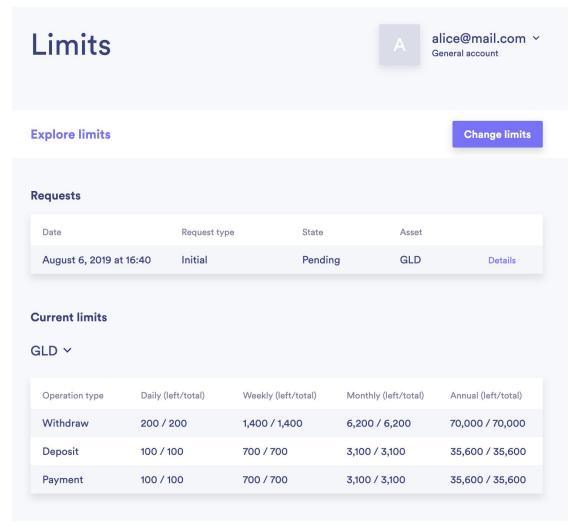


• As a verified user, I want to be able to upload the documents required for changing limits.



- As a verified user, I want to be able to view details of my account limits on asset transfers.
- As a verified user, I want to be able to view details of my account limits on asset withdrawals.
- As a verified user, I want to be able to view details of my account limits on asset deposits.

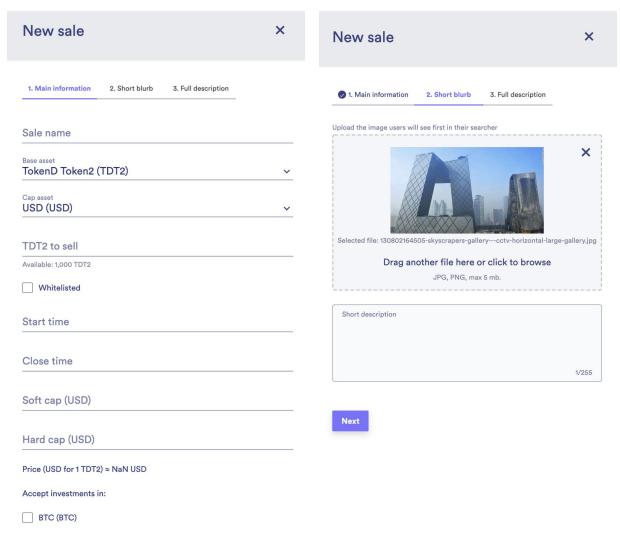




# Corporate user

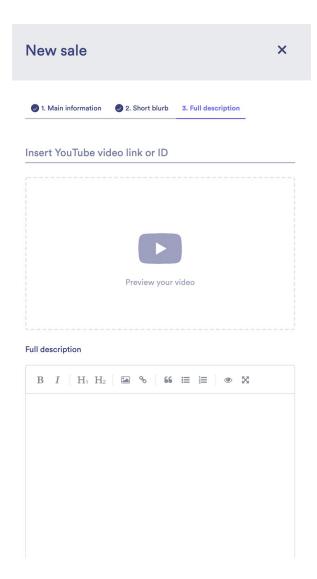
- As a corporate user, I want to be able to submit information on a token offering campaign
- As a corporate user, I want to be able to submit a description of an ongoing campaign.





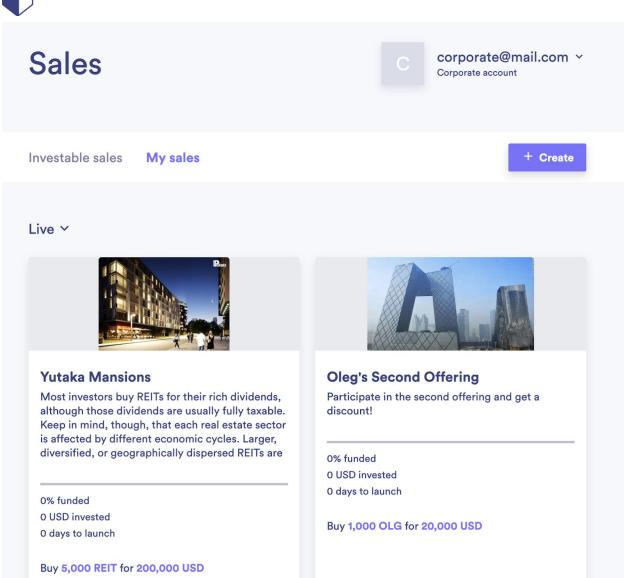
As a corporate user, I want to be able to submit information on backing assets.





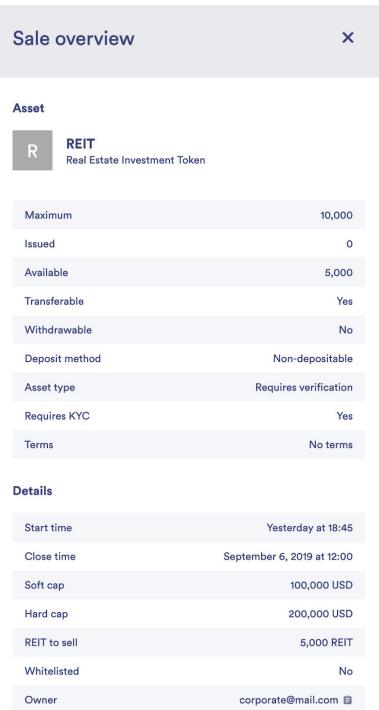
• As a corporate user, I want to be able to view portfolios of the token offering campaigns in which assets have been invested.





• As corporate user, I want to be able to view a summary of a specific token offering campaign.

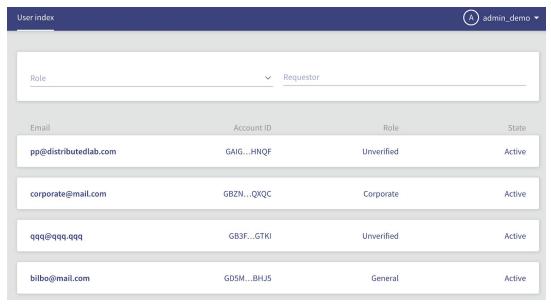




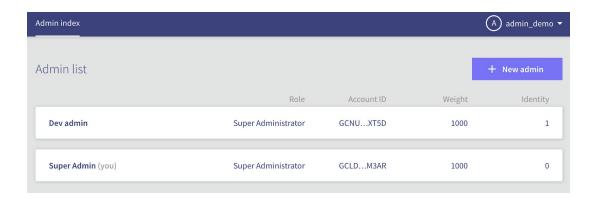
# **Administrator**

 As an administrator, I want to be able to view details of all the platform users' accounts.



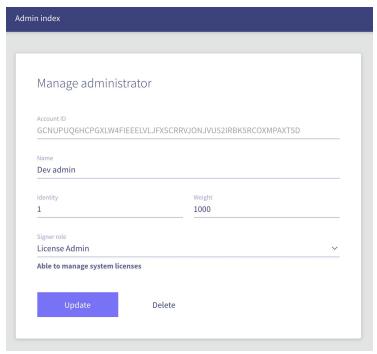


• As an administrator, I want to be able to view the list of all other platform administrators.

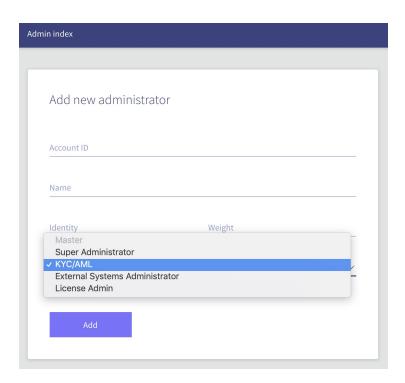


• As an **administrator**, I want to be able to **view updates** associated with **platform administrators' accounts**.





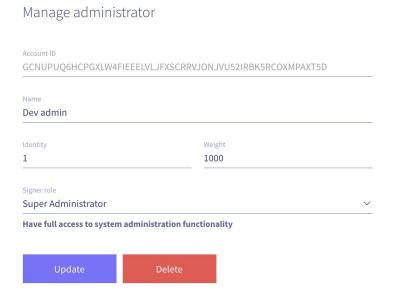
• As an **administrator**, I want to be able to **create platform administrators** using predefined templates.



• As an **administrator**, I want to be able to **update administrator accounts** on the platform.



• As an administrator, I want to be able to delete platform administrators.



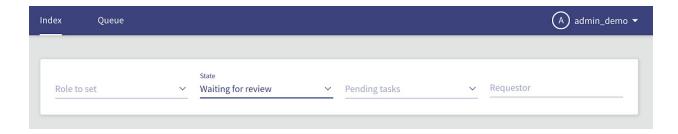
# KYC/AML and identity requirements for administrator

As an administrator, I want to be able to view and verify users' KYC data.





- As an administrator, I want to be able to view history of KYC requests.
- As an administrator, I want to be able to view list of pending KYC requests.
- As an administrator, I want to be able to view pending new KYC requests.
- As an administrator, I want to be able to view update KYC requests of verified users.
- As an administrator, I want to be able to view pending new KYC requests of corporate users.
- As an administrator, I want to be able to view pending update KYC requests of corporate users.



# Pre-issuance requirements for administrator

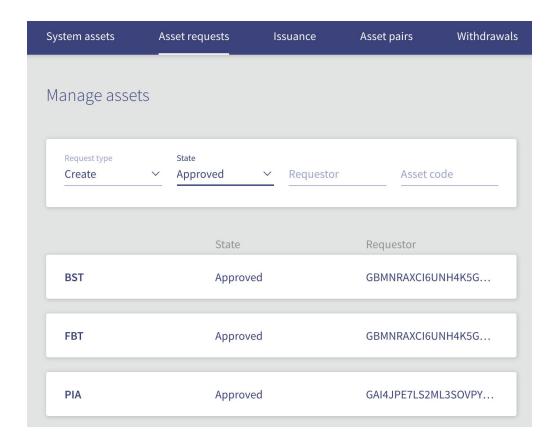
• As an administrator, I want to be able to view and process requests for pre-issuance.





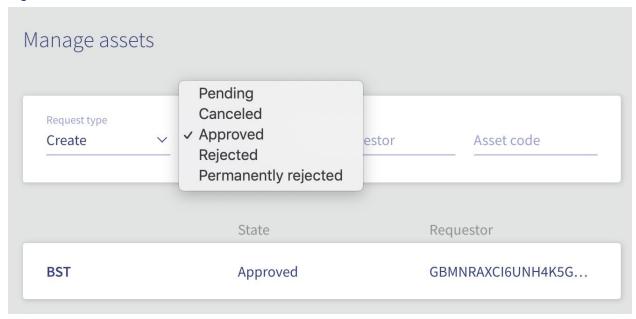
# Issuance requirements for administrator

- As an **administrator**, I want to be able to **view all assets** on the platform.
- As an administrator, I want to be able to view requests for issuing tokenized assets.

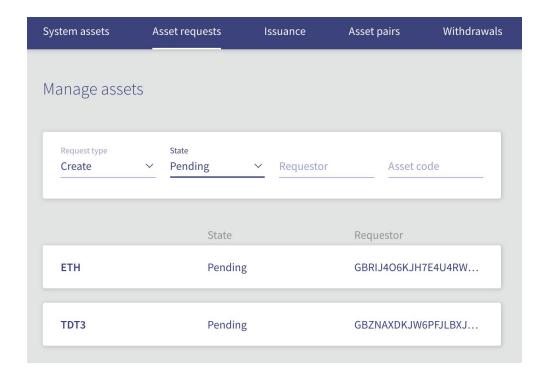


 As an administrator, I want to be able to view the entire history of events related to asset issuance.



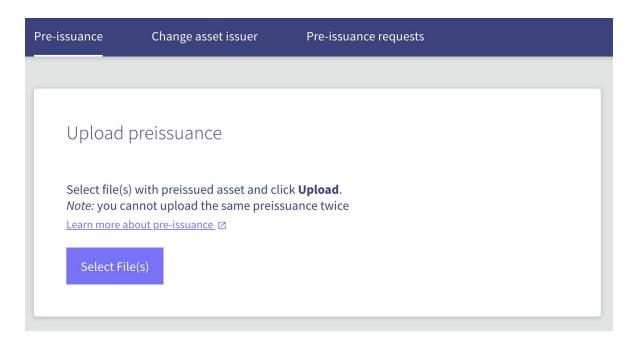


- As an administrator, I want to be able to view pre-issuance files.
- As an administrator, I want to be able to approve requests for asset issuance.
- As an administrator, I want to be able to reject requests for asset issuance.





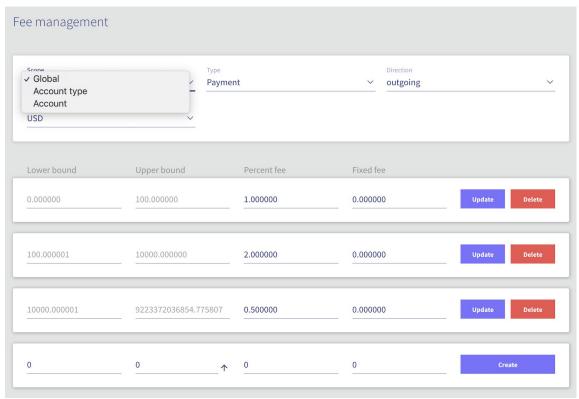
• As an **administrator**, I want to be able to **sign and upload pre-issuance files** on the platform.



## Fees requirements for administrator

- As an **administrator**, I want to be able to **view and manage fees** on the platform to fulfill regulatory and business requirements.
- As an **administrator**, I want to be able to **view detailed fees configurations** for a particular account type, a particular asset, and a particular account.
- As an administrator, I want to be able to manage fees for a particular asset.
- As an administrator, I want to be able to manage fees for a particular account type.
- As an administrator, I want to be able to manage fees for a particular account.

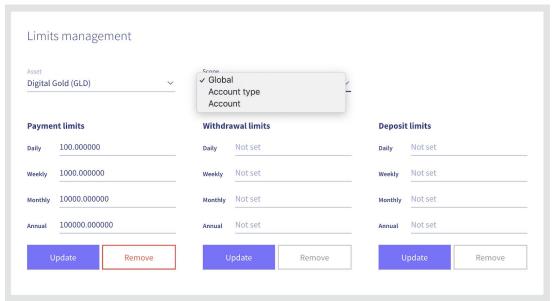




## Limits requirements for administrator

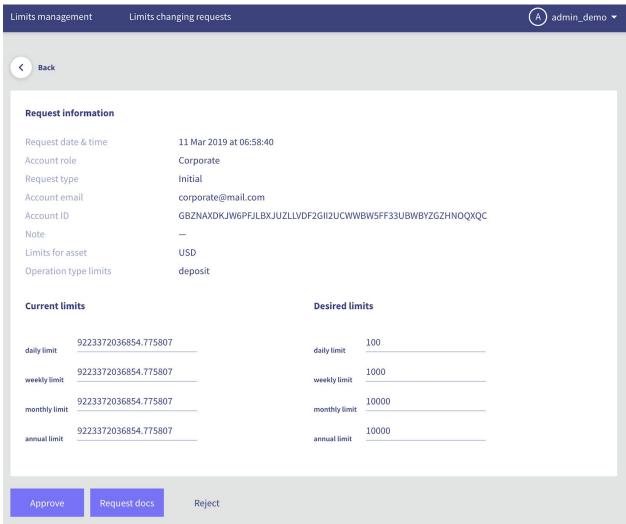
- As an **administrator**, I want to be able to **view and manage limits** on the platform to fulfill regulatory and business requirements.
- As an **administrator**, I want to be able to **manage limits** for a **particular account type**.
- As an administrator, I want to be able to manage limits for a particular account.





- As an administrator, I want to be able to manage user's requests for changing limits.
- As an administrator, I want to be able to manage requests for changing limits with documents uploading.
- As an administrator, I want to be able to view details of verified users' accounts.
- As an administrator, I want to be able to view details of corporate users' accounts.



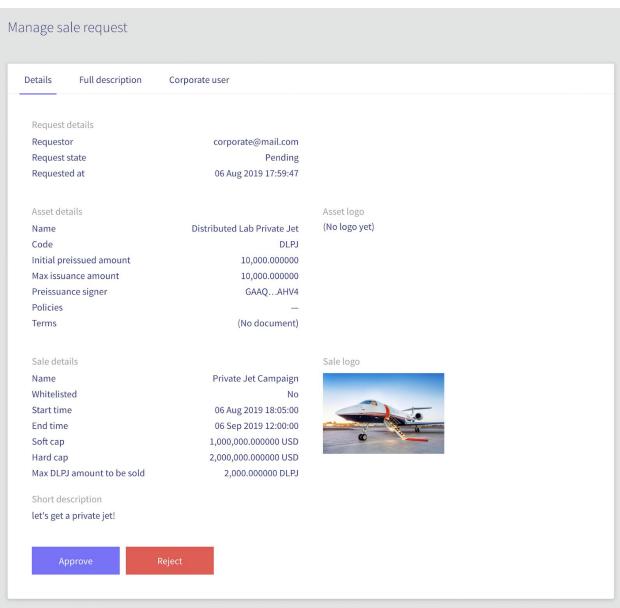


## token offering requirements for administrator

- As an **administrator**, I want to be able to **view and process requests for creating token offering campaigns**.
- As an **administrator**, I want to be able to **view list of pending requests** for creating token offering campaigns.

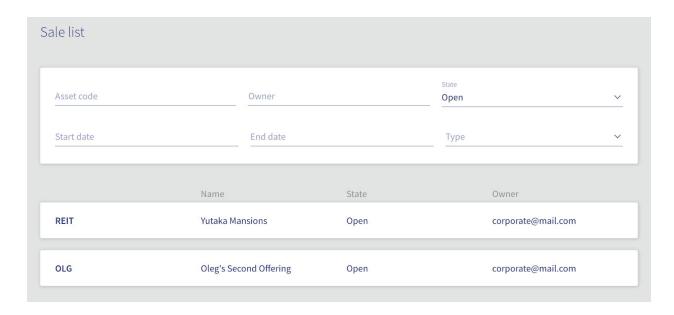








- As an administrator, I want to be able to view list of approved requests for creating token offering campaigns.
- As an administrator, I want to be able to view list of token offering campaigns.





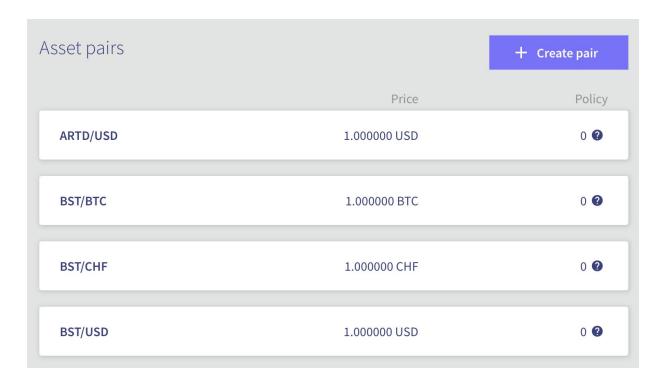
#### Sale overview

| etails Full description            | Participants Corporate user        |            |
|------------------------------------|------------------------------------|------------|
| Asset details                      |                                    | Asset logo |
| Name                               | Real Estate Investment Token       | (No legal  |
| Code                               | REIT                               |            |
| Owner                              | corporate@mail.com                 |            |
| Preissued asset signer             | GAAQAHV4                           |            |
| Max issuance amount                | 10,000.000000                      |            |
| Pending issuance                   | 5,000.000000                       |            |
| Issued                             | 0.000000                           |            |
| Available for issuance             | 5,000.000000                       |            |
| Policies                           | Transferable                       |            |
| Terms                              | (No document)                      |            |
| Sale details                       |                                    | Sale logo  |
| Name                               | Yutaka Mansions                    | P          |
| State                              | Open                               |            |
| Whitelisted                        | No                                 |            |
| Owner                              | corporate@mail.com                 |            |
| Start time                         | 05 Aug 2019 18:45:00               |            |
| End time                           | 06 Sep 2019 12:00:00               | X III      |
| BTC progress                       |                                    |            |
| Price (per REIT)                   | 1.000000                           |            |
| Current cap                        | 0.000000                           |            |
| Total current cap                  | 0.000000                           |            |
| Hard cap                           | 20.000000                          |            |
| CHF progress                       |                                    |            |
| Price (per REIT)                   | 1,000000                           |            |
| Current cap                        | 0.000000                           |            |
| Total current cap                  | 0.000000                           |            |
| Hard cap                           | 200,000.000000                     |            |
|                                    |                                    |            |
| GLD progress<br>Price (per REIT)   | 1.000000                           |            |
| Current cap                        | 0.000000                           |            |
| Total current cap                  | 0.000000                           |            |
| Hard cap                           | 61,919.504644                      |            |
|                                    | 01,313,304044                      |            |
| USD progress                       | 1.000000                           |            |
| Price (per REIT)                   | 1.000000                           |            |
| Current cap                        | 0.000000                           |            |
| Total current cap<br>Hard cap      | 0.000000<br>200,000.000000         |            |
| Total progress                     |                                    |            |
| Current cap                        | 0.000000 USD                       |            |
| Soft cap                           | 100,000.000000 USD                 |            |
| Hard cap                           | 200,000.000000 USD                 |            |
| Max REIT amount to be sold         | 5,000.000000 REIT                  |            |
| Short description                  |                                    |            |
| Most investors buy REITs for the   | eir rich dividends, although those |            |
| dividends are usually fully taxa   |                                    |            |
| each real estate sector is affecte | ed by different economic cycles.   |            |



## Trade requirements for administrator

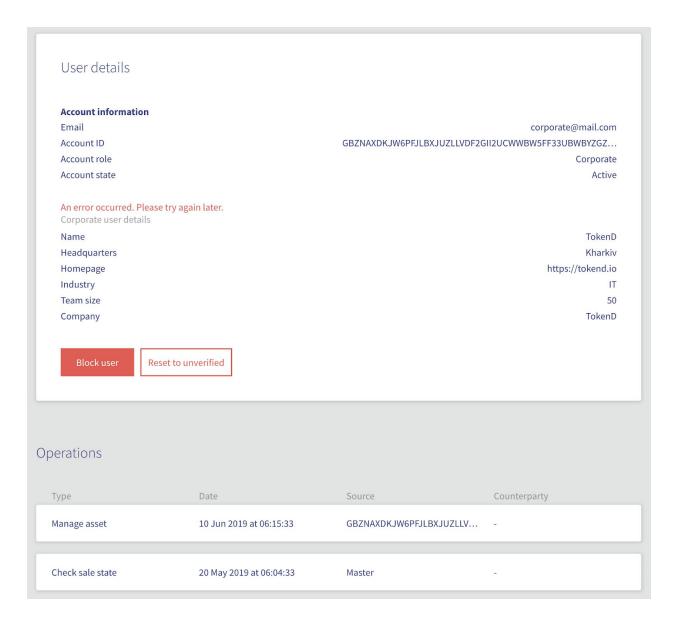
- As an **administrator**, I want to be able to **add asset pair** to list of ones available for trading.
- As an **administrator**, I want to be able to **enable / disable asset pair** in list of ones available for trading.



## Security requirements for administrator

- As an administrator, I want to be able to view details of user accounts.
- As an **administrator**, I want to be able to **monitor users' actions** on the platform to detect security policy threats.
- As an **administrator**, I want to be able to **ban user accounts** to comply with platform security policy.
- As an **administrator**, I want to be able to **unban user accounts** to restore user access to platform services..





# **Applications requirements**

#### User

- As a user, I want my wallet to store all transactions associated with me.
- As a user, I want to be able to manage my account and assets via web application.
- As a user, I want to be able to manage my account and assets via mobile wallet.



- As a user, I want to be able to access my wallet from any device at any time convenient for me.
- As a user, I want to be able to restore access to my account in case my password is lost.
- As a **user**, I want to be able to log out of the platform.

#### Corporate user

- As a corporate user, I want to be able to use an offline device to generate keys for pre-issuance as well as to encrypt / decrypt them.
- As a corporate user, I want to be able to create tokenized asset pre-issuance file on offline device to ensure higher security level.

#### **Administrator**

- As an administrator, I want to be able to manage operations via web application.
- As an administrator, I want to be able to log out of the platform.
- As an administrator, I want to be able to generate keys file on offline device.
- As an administrator, I want to be able to create pre-issuance file on offline device.
- As an administrator, I want to be able to review details of pre-issuance file on offline device.

## Ledger synchronization requirements

- As a platform owner, I want to be able to perform the initial configuration of the platform by changing the initialization scripts, namely: to configure the roles of users and administrators of the platform, system assets, trading pairs of assets.
- As a platform owner, I want to be able to distribute maintaining history between several parties with possible real-time synchronization between them.



#### **Learn More**

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#### **About TOKEND**

TOKEND is a white label blockchain software platform that consolidates best practices of tokenization solutions. It allows you to issue, transfer and exchange your assets with a high level of privacy, security, and auditability while following regulations of your jurisdiction. TOKEND is designed for enterprises who are willing to take advantage of tokenization or experiment with blockchain technology without the need for maintaining the expensive team of blockchain experts and within the shortest time to market.

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