

# InsuranceFund

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The Lido Insurance Fund is a vault contract that serves as a simple transparent store for funds allocated for self-insurance purposes.

## Mechanics

The Insurance Fund is a simple vault that inherits OpenZeppelin's [Ownable](#) and allows the owner to transfer ether, ERC20, ERC721, ERC1155 tokens from the contract. The owner, which will be the Lido DAO Agent, can transfer ownership to another entity with an exception of [zero address](#) .

## View methods

### owner()

Returns the current owner .

function

owner ( )

public

view

returns

( address ) ;

### renounceOwnership()

Reverts always.

function

renounceOwnership ( )

public

pure override ;

## Methods

### transferERC1155()

Transfer a single ERC1155 token with the specified id in the specified amount to an entity from the contract balance. A contract recipient must implement ERC1155TokenReceiver in accordance to [EIP-1155](#) in order to safely receive tokens.

- reverts if msg.sender
- is not owner
- ;
- reverts if \_recipient
- is zero address;
- reverts if the contract balance is insufficient;
- emits ERC721Transferred(address indexed \_token, address indexed \_recipient, uint256 \_tokenId, bytes \_data)
- .

function

transferERC1155 ( address \_token ,

address \_recipient ,

uint256 \_tokenId ,

```
uint256 _amount ,  
bytes  
calldata _data )  
external ;
```

### Parameters

Name Type Description  
\_token address an ERC1155 token  
\_recipient address recipient entity  
\_tokenId uint256 token identifier  
\_amount uint256 transfer amount  
\_data bytes byte sequence for onERC1155Received hook info  
Note: transferERC1155 does not support multi-token batch transfers.

### transferERC20()

Transfer an ERC20 token to an entity in the specified amount from the contract balance.

- reverts if msg.sender
- is not owner
- ;
- reverts if \_recipient
- is zero address;
- reverts if the contract balance is insufficient;
- emits ERC20Transferred(address indexed \_token, address indexed \_recipient, uint256 \_amount)
- .

```
function  
transferERC20 ( address _token ,  
address _recipient ,  
uint256 _amount )  
external ;
```

### Parameters

Name Type Description  
\_token address an ERC20 token  
\_recipient address recipient entity  
\_amount uint256 transfer amount

### transferERC721()

Transfer a single ERC721 token with the specified id to an entity from the contract balance. A contract recipient must implement ERC721TokenReceiver in accordance to [EIP-721](#) in order to safely receive tokens.

- reverts if msg.sender
- is not owner
- ;
- reverts if \_recipient
- is zero address;
- emits ERC721Transferred(address indexed \_token, address indexed \_recipient, uint256 \_tokenId, bytes \_data)
- .

```
function  
transferERC721 ( address _token ,  
address _recipient ,  
uint256 _tokenId ,  
bytes  
memory _data )  
external ;
```

### Parameters

Name	Type	Description
<code>_token</code>	address	an ERC721 token
<code>_recipient</code>	address	recipient entity
<code>_tokenId</code>	uint256	token identifier
<code>_data</code>	bytes	byte sequence for onERC721Received hook

## transferEther()

Transfers ether to an entity from the contract balance.

- reverts if `msg.sender`
- is not owner
- ;
- reverts if `_recipient`
- is zero address;
- reverts if the contract balance is insufficient;
- reverts if the actual transfer OP fails (e.g. `_recipient`
- is a contract with no fallback);
- emits `EtherTransferred`(address indexed `_recipient`, uint256 `_amount`)
- .

function

transferEther ( address `_recipient` ,

uint256 `_amount` )

external ;

### Parameters

Name	Type	Description
<code>_recipient</code>	address	recipient entity
<code>_amount</code>	uint256	transfer amount

## transferOwnership()

Assigns newOwner as the owner .

- reverts if `msg.sender`
- is not owner
- ;
- reverts if newOwner
- is zero address;
- emit `OwnershipTransferred`(address indexed `previousOwner`, address indexed `newOwner`)
- .

function

transferOwnership ( address `newOwner` )

public ;

### Parameters

Name	Type	Description
<code>newOwner</code>	address	entity which will have access to all state-mutating operations

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