DESSERT FINANCE

BRIDGE.SOL

ERC-20 Audit

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FOR PROVIDED REPOSITORY

PRIVATE REPORT FOR ZCHAIN

PROJECT AUDIT

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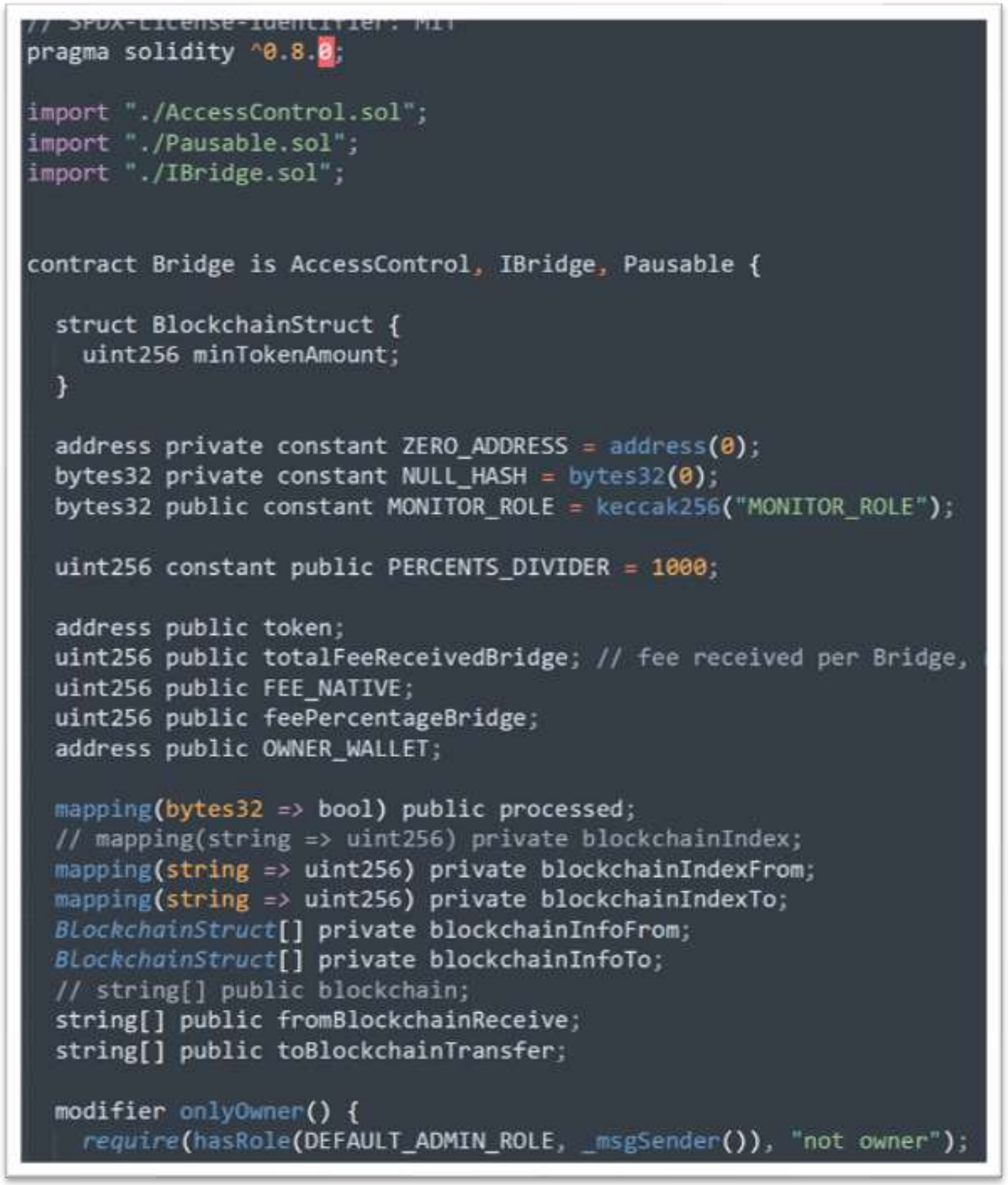
Solidity Contract Code Audit – Overview

Dessert Finance was commissioned to perform an audit on Bridge.sol



```
// SPDX-License-Identifier: MIT
pragma solidity ^0.8.0;

import "./AccessControl.sol";
import "./Pausable.sol";
import "./IBridge.sol";


contract Bridge is AccessControl, IBridge, Pausable {

  struct BlockchainStruct {
    uint256 minTokenAmount;
  }

  address private constant ZERO_ADDRESS = address(0);
  bytes32 private constant NULL_HASH = bytes32(0);
  bytes32 public constant MONITOR_ROLE = keccak256("MONITOR_ROLE");

  uint256 constant public PERCENTS_DIVIDER = 1000;

  address public token;
  uint256 public totalFeeReceivedBridge; // fee received per Bridge,
  uint256 public FEE_NATIVE;
  uint256 public feePercentageBridge;
  address public OWNER_WALLET;

  mapping(bytes32 => bool) public processed;
  // mapping(string => uint256) private blockchainIndex;
  mapping(string => uint256) private blockchainIndexFrom;
  mapping(string => uint256) private blockchainIndexTo;
  BlockchainStruct[] private blockchainInfoFrom;
  BlockchainStruct[] private blockchainInfoTo;
  // string[] public blockchain;
  string[] public fromBlockchainReceive;
  string[] public toBlockchainTransfer;

  modifier onlyOwner() {
    require(hasRole(DEFAULT_ADMIN_ROLE, _msgSender()), "not owner");
```

Main Contract Name

Bridge

Solidity Version

^0.8.0

License

SPDX-License-Identifier: MIT

Import Files

import "./AccessControl.sol";

import "./Pausable.sol";

import "./IBridge.sol";

Ownability

The contract is owned by an address that has the DEFAULT_ADMIN_ROLE and includes specific functions restricted by the onlyOwner modifier, ensuring only the owner can execute them.

Modifiers

onlyOwner

onlyMonitor

onlyEOAs

The contract code is not yet deployed.

Solidity Contract Code Audit – Bridge.sol (1/2)

Item	Description	Risk Level
Solidity assert violation	Potential for assertion failures, although not present in the code	Low
Integer overflow in arithmetic operation	Properly handled with SafeMath, but no specific library is used	Medium
Integer underflow in arithmetic operation	Properly handled with SafeMath, but no specific library is used	Medium
Caller can redirect execution to arbitrary locations	Not observed in the code	Low
Caller can write to arbitrary storage locations	Not observed in the code	Low
Dangerous use of uninitialized storage variables	Not observed in the code	Low
Any sender can withdraw Coins from the contract account	Only owner can withdraw tokens, protected by modifiers	Low
Any sender can trigger Authorization Control	Authorization control is properly handled using roles	Low
Use of "tx.origin" as a part of authorization control	Present in `onlyEOAs` modifier, considered insecure	Medium
Delegatecall to a user-supplied address	Not observed in the code	Low
Call to a user-supplied address	Present in `_sendToken` and other functions, but safely used with checks	Low
Block timestamp influences a control flow decision	Not observed in the code	Low
Loop over unbounded data structure	Several functions loop over arrays, potential for gas limit issues	Medium

The contract code is not yet deployed.

The vulnerabilities listed above were not found in the token's Smart Contract.

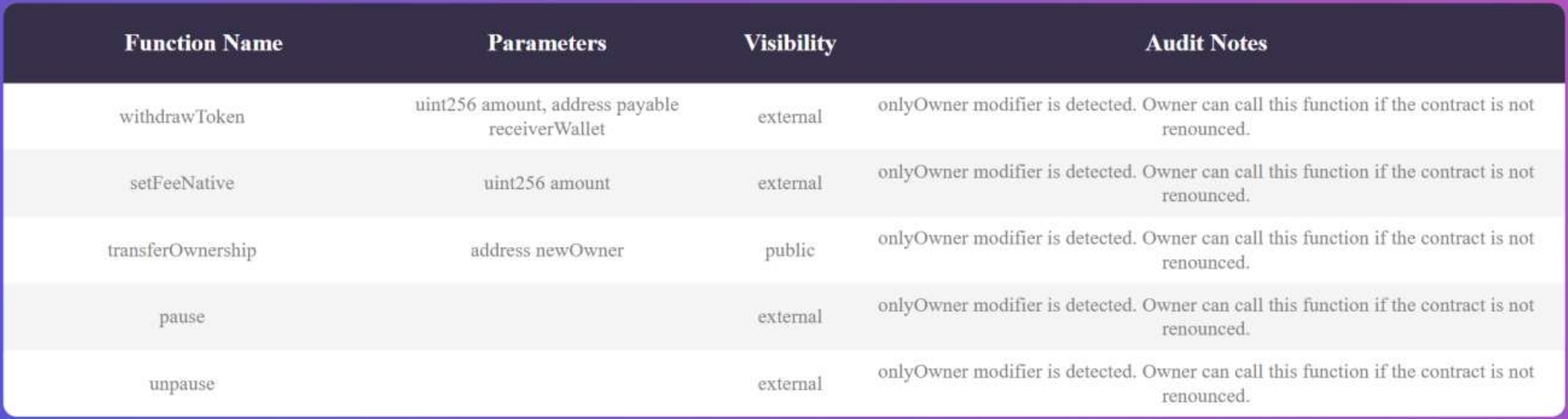
Solidity Contract Code Audit – Bridge.sol (2/2)

Item	Description	Risk Level
Usage of "continue" in "do-while"	Not observed in the code	Low
Persistent state read following external call	Not observed in the code	Low
Persistent state write following external call	Not observed in the code	Low
Account state accessed after call to user-defined address	Not observed in the code	Low
Return value of an external call is not checked	Properly handled in `_sendToken` and other functions	Low
Potential weak source of randomness	Not observed in the code	Low
Requirement violation	Properly handled with `require` statements	Low
Call with hardcoded gas amount	Not observed in the code	Low
Incorrect token implementation	Uses standard ERC20 functions, appears correct	Low
Function parameter shadows a state variable	Not observed in the code	Low
Unary operation directly after assignment	Not observed in the code	Low
Unary operation without effect	Not observed in the code	Low
Unused state variable	None observed	Low
Unused local variable	None observed	Low
Function visibility is not set	Proper visibility set on all functions	Low
Use of deprecated functions: callcode(), sha3(), etc.	Not observed in the code	Low
Use of deprecated global variables (msg.gas, ...)	Not observed in the code	Low
Use of deprecated keywords (throw, var)	Not observed in the code	Low
Incorrect function state mutability	Proper mutability set on all functions	Low

The contract code is not yet deployed.

The vulnerabilities listed above were not found in the token's Smart Contract.

Contract Code Audit – Owner Accessible Functions – Bridge.sol



Function Name	Parameters	Visibility	Audit Notes
withdrawToken	uint256 amount, address payable receiverWallet	external	onlyOwner modifier is detected. Owner can call this function if the contract is not renounced.
setFeeNative	uint256 amount	external	onlyOwner modifier is detected. Owner can call this function if the contract is not renounced.
transferOwnership	address newOwner	public	onlyOwner modifier is detected. Owner can call this function if the contract is not renounced.
pause		external	onlyOwner modifier is detected. Owner can call this function if the contract is not renounced.
unpause		external	onlyOwner modifier is detected. Owner can call this function if the contract is not renounced.

The functions listed above can be called by the contract owner.

If contract ownership has been renounced there is no way for the above listed functions to be called.

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The final interpretation of this statement belongs to Dessert Finance.

Dessert Finance highly advises against using cryptocurrencies as speculative investments and they should be used solely for the utility they aim to provide.

Thank You

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