Cyberscope

Audit Report

InSure DeFi

December 2022

Type	ERC20
Network	ETH
Address	0xcb86c6a22cb56b6cf40cafedb06ba0df188a416e
Audited by	© cyberscope

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Review

Contract Name	TokenERC20
Compiler Version	v0.4.26+commit.4563c3fc
Optimization	200 runs
Explorer	https://etherscan.io/address/0xcb86c6a22cb56b6cf40cafedb06ba0df188a416e
Address	0xcb86c6a22cb56b6cf40cafedb06ba0df188a416e
Network	ETH
Symbol	SURE
Decimals	18
Total Supply	88,000,000,000

Audit Updates

Initial Audit	22 Dec 2022

Source Files

Filename	SHA256
TokenERC20.sol	2769e8cfd28a63c3d608dce17a31e07c993673b15ff552dabaa9d80de496ca8b

Analysis

● Critical ● Medium ● Minor / Informative ● Pass

Severity	Code	Description	Status
●	ST	Stops Transactions	Passed
●	OCTD	Transfers Contract's Tokens	Passed
●	OTUT	Transfers User's Tokens	Passed
●	ELFM	Exceeds Fees Limit	Passed
●	ULTW	Transfers Liquidity to Team Wallet	Passed
●	MT	Mints Tokens	Passed
●	BT	Burns Tokens	Passed
●	BC	Blacklists Addresses	Passed

Diagnostics

Critical Medium Minor / Informative

Severity	Code	Description	Status
●	L01	Public Function could be Declared External	Unresolved
●	L02	State Variables could be Declared Constant	Unresolved
●	L04	Conformance to Solidity Naming Conventions	Unresolved
●	L19	Stable Compiler Version	Unresolved
●	L23	ERC20 Interface Misuse	Unresolved

L01 - Public Function could be Declared External

Criticality	Minor / Informative
Location	TokenERC20.sol#L7,115
Status	Unresolved

Description

A public function is a function that can be called from external contracts or from within the contract itself. An external function is a function that can only be called from external contracts, and cannot be called from within the contract itself.

It's generally a good idea to declare functions as external if they are only intended to be called from external contracts, as this can help to make the contract's code easier to understand and maintain. Declaring a function as external can also help to improve the contract's performance and gas consumption.

```
function receiveApproval(address _from, uint256 _value, address _token, bytes
_extraData) public;

function approveAndCall(address _spender, uint256 _value, bytes _extraData)
        public
        returns (bool success) {
        tokenRecipient spender = tokenRecipient(_spender);
        if (approve(_spender, _value)) {
            spender.receiveApproval(msg.sender, _value, this, _extraData);
            return true;
        }
    }
```

Recommendation

It's important to choose the appropriate visibility for each function based on how it is intended to be used. Declaring a function as external when it should be public, or vice versa can lead to unnecessary gas consumption.

L02 - State Variables could be Declared Constant

Criticality	Minor / Informative
Location	TokenERC20.sol#L14
Status	Unresolved

Description

State variables can be declared as constant using the constant keyword. This means that the value of the state variable cannot be changed after it has been set. Additionally, the constant variables decrease gas consumption of the corresponding transaction.

```
uint8 public decimals = 18
```

Recommendation

Constant state variables can be useful when the contract wants to ensure that the value of a state variable cannot be changed by any function in the contract. This can be useful for storing values that are important to the contract's behavior, such as the contract's address or the maximum number of times a certain function can be called. The team is advised to add the constant keyword to state variables that never change.

L04 - Conformance to Solidity Naming Conventions

Criticality	Minor / Informative
Location	TokenERC20.sol#L7,72,85,100,115,132,148
Status	Unresolved

Description

The Solidity style guide is a set of guidelines for writing clean and consistent Solidity code. Adhering to a style guide can help improve the readability and maintainability of the Solidity code, making it easier for others to understand and work with.

The followings are a few key points from the Solidity style guide:

1. Use camelCase for function and variable names, with the first letter in lowercase (e.g., myVariable, updateCounter).
2. Use PascalCase for contract, struct, and enum names, with the first letter in uppercase (e.g., MyContract, UserStruct, ErrorEnum).
3. Use uppercase for constant variables and enums (e.g., MAX_VALUE, ERROR_CODE).
4. Use indentation to improve readability and structure.
5. Use spaces between operators and after commas.
6. Use comments to explain the purpose and behavior of the code.
7. Keep lines short (around 120 characters) to improve readability.

```
interface tokenRecipient { function receiveApproval(address _from, uint256
_value, address _token, bytes _extraData) public; }
uint256 _value
address _to
address _from
address _spender
bytes _extraData
```

Recommendation

By following the Solidity naming convention guidelines, the codebase increased the readability, maintainability, and makes it easier to work with.

Find more information on the Solidity documentation https://docs.soliditylang.org/en/v0.8.17/style-guide.html#naming-convention.

L19 - Stable Compiler Version

Criticality	Minor / Informative
Location	TokenERC20.sol#L5
Status	Unresolved

Description

The ^ symbol indicates that any version of Solidity that is compatible with the specified version (i.e., any version that is a higher minor or patch version) can be used to compile the contract. The version lock is a mechanism that allows the author to specify a minimum version of the Solidity compiler that must be used to compile the contract code. This is useful because it ensures that the contract will be compiled using a version of the compiler that is known to be compatible with the code.

```
pragma solidity ^0.4.16;
```

Recommendation

The team is advised to lock the pragma to ensure the stability of the codebase. The locked pragma version ensures that the contract will not be deployed with an unexpected version. An unexpected version may produce vulnerabilities and undiscovered bugs. The compiler should be configured to the lowest version that provides all the required functionality for the codebase. As a result, the project will be compiled in a well-tested LTS (Long Term Support) environment.

L23 - ERC20 Interface Misuse

Criticality	Minor / Informative
Location	TokenERC20.sol#L72
Status	Unresolved

Description

The ERC20 is a standard interface for tokens on the Ethereum blockchain. It defines a set of functions and events that a contract must implement in order to be considered an ERC20 token. According to the ERC20 interface, the transfer function returns a bool value, which indicates the success or failure of the transfer. If the transfer is successful, the function returns true. If the transfer fails, the function returns false. The contract implements the transfer function without the return value.

```
function transfer(address _to, uint256 _value) public {
        _transfer(msg.sender, _to, _value);
    }
```

Recommendation

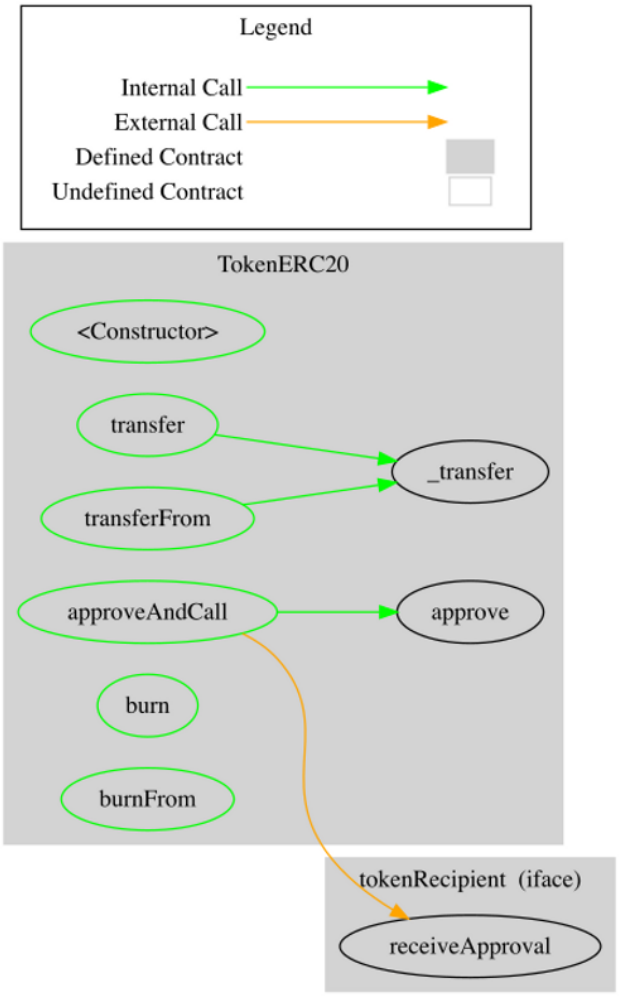
The incorrect implementation of the ERC20 interface could potentially lead to problems when interacting with the contract, as other contracts or applications that expect the ERC20 interface may not behave as expected.

Functions Analysis

Contract	Type	Bases		
	Function Name	**Visibility**	**Mutability**	**Modifiers**
tokenRecipient	Interface			
	receiveApproval	Public	✓	-
TokenERC20	Implementation			
		Public	✓	-
	_transfer	Internal	✓	
	transfer	Public	✓	-
	transferFrom	Public	✓	-
	approve	Public	✓	-
	approveAndCall	Public	✓	-
	burn	Public	✓	-
	burnFrom	Public	✓	-

Inheritance Graph

Flow Graph



Summary

InSure DeFi is an interesting project that has a friendly and growing community. The Smart Contract analysis reported no compiler error or critical issues. The contract Owner can access some admin functions that can not be used in a malicious way to disturb the users' transactions.

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Cyberscope is one of the leading smart contract audit firms in the crypto space and has built a high-profile network of clients and partners.

The Cyberscope team

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