soken

SMART CONTRACT SECURITY AUDIT

City Of Gold

November, 2021

Website: soken.io

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Disclaimer

This is a comprehensive report based on our automated and manual examination of cybersecurity vulnerabilities and framework flaws. We took into consideration smart contract based algorithms, as well. Reading the full analysis report is essential to build your understanding of project's security level. It is crucial to take note, though we have done our best to perform this analysis and report, that you should not rely on the our research and cannot claim what it states or how we created it. Before making any judgments, you have to conduct your own independent research. We will discuss this in more depth in the following disclaimer - please read it fully.

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Security analysis is based only on the smart contracts. No applications or operations were reviewed for security. No product code has been reviewed.

Procedure

Our analysis contains following steps:

1. Project Analysis;

2. Manual analysis of smart contracts:
- Deploying smart contracts on any of the network(Ropsten/Rinkeby) using Remix IDE
- Hashes of all transaction will be recorded
- Behaviour of functions and gas consumption is noted, as well.

3. Unit Testing:
- Smart contract functions will be unit tested on multiple parameters and under multiple conditions to ensure that all paths of functions are functioning as intended.
- In this phase intended behaviour of smart contract is verified.
- In this phase, we would also ensure that smart contract functions are not consuming unnecessary gas.
- Gas limits of functions will be verified in this stage.

4. Automated Testing:
- Mythril
- Oyente
- Manticore
- Solgraph

Terminology

We categorize the finding into 4 categories based on their vulnerability:

- Low-severity issue — less important, must be analyzed
- Medium-severity issue — important, needs to be analyzed and fixed
- High-severity issue —important, might cause vulnerabilities, must be analyzed and fixed
- Critical-severity issue —serious bug causes, must be analyzed and fixed.

Limitations

The security audit of Smart Contract cannot cover all vulnerabilities. Even if no vulnerabilities are detected in the audit, there is no guarantee that future smart contracts are safe. Smart contracts are in most cases safeguarded against specific sorts of attacks. In order to find as many flaws as possible, we carried out a comprehensive smart contract audit. Audit is a document that is not legally binding and guarantees nothing.

Token Contract Details for 03.11.2021

Contract Name: **CoinToken**

Deployed address: **0xCE1dB03de797Ffb5bFE98e3903f2CBEc841b26f8**

Total Supply: **1,735,729,226.654242**

Token Ticker: **COG**

Decimals: **9**

Token holders: **72**

Transactions count: **1,141**

Top 100 holders dominance: **100%**

Audit Details

Project Name: **City Of Gold**

Language: **Solidity**

Compiler version: **v.0.8.2**

Blockchain: **BSC**

Social Profiles

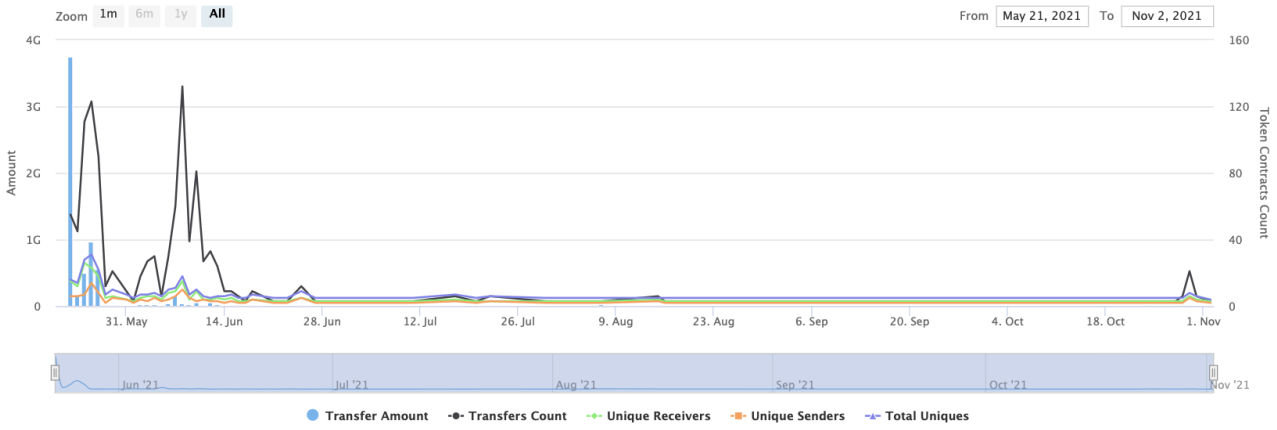
Project Website: **https://h4u.city**

Project Twitter: **https://twitter.com/CityOfGoldH4U**

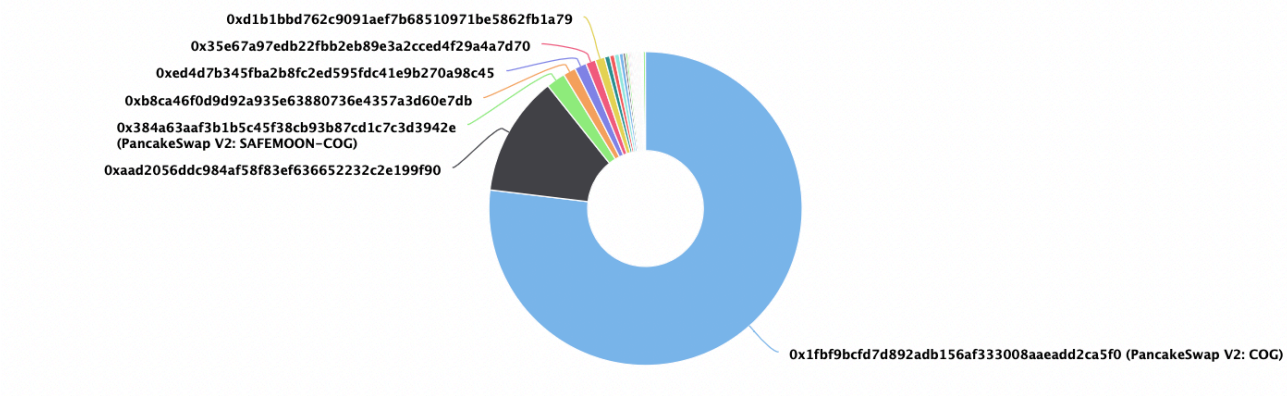
Project Announcement Telegram: **https://t.me/cityofgoldtoken**

Project Facebook: **https://www.facebook.com/CityOfGoldH4U**

Token Contract Overview



COG Token Distribution



COG Top 10 Holders

Rank	Address	Quantity (Token)	Percentage
1	PancakeSwap V2: COG	1,334,811,274.93524533	76.9020%
2	0xaad2056ddc984af58f83ef636652232c2e199f90	215,099,950.1178234	12.3925%
3	PancakeSwap V2: SAFEMOON-COG	34,412,303.366448669	1.9826%
4	0xb8ca46f0d9d92a935e63880736e4357a3d60e7db	22,686,766.441245326	1.3070%
5	0xed4d7b345fba2b8fc2ed595fdc41e9b270a98c45	20,763,291.10181602	1.1962%
6	0x35e67a97edb22fbb2eb89e3a2cced4f29a4a7d70	17,848,273.861388724	1.0283%
7	0xd1b1bbd762c9091aef7b68510971be5862fb1a79	17,009,731.3473113	0.9800%
8	0xaeac8ab9c6bedbf38af6958fed002138c387a3df	9,102,645.958772254	0.5244%
9	0xf7e520b71946ec8d431a5f6f99dccb95441ca45c	8,579,232.973449691	0.4943%
10	0x03d3c5f5b3d06ac980c301f87fc1d62569fc52c1	8,502,375.741513605	0.4898%

Vulnerabilities checking

Issue Description	Checking Status
Compiler Errors	Completed
Delays in Data Delivery	Completed
Re-entrancy	Completed
Transaction-Ordering Dependence	Completed
Timestamp Dependence	Completed
Shadowing State Variables	Completed
DoS with Failed Call	Completed
DoS with Block Gas Limit	Low-issues
Outdated Complier Version	Completed
Assert Violation	Completed
Use of Deprecated Solidity Functions	Completed
Integer Overflow and Underflow	Completed
Function Default Visibility	Completed
Malicious Event Log	Completed
Math Accuracy	Completed
Design Logic	Completed
Fallback Function Security	Completed
Cross-function Race Conditions	Completed
Safe Zeppelin Module	Completed

Security Issues

1) Out of Gas issue:

The function includeAccount() uses the loop to find and remove addresses from the _excluded list. Function will be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list.

```
function includeAccount(address account) external onlyOwner() {
    require(_isExcluded[account], "Account is already included");
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_excluded[i] == account) {
            _excluded[i] = _excluded[_excluded.length - 1];
            _tOwned[account] = 0;
            _isExcluded[account] = false;
            _excluded.pop();
            break;
        }
    }
}
```

2) Out of Gas issue:

The function _getCurrentSupply also uses the loop for evaluating total supply. It also could be aborted with OUT_OF_GAS exception if there will be a long excluded addresses list.

```
function _getCurrentSupply() private view returns(uint256, uint256) {
    uint256 rSupply = _rTotal;
    uint256 tSupply = _tTotal;
    for (uint256 i = 0; i < _excluded.length; i++) {
        if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return (_rTotal, _tTotal);
        rSupply = rSupply.sub(_rOwned[_excluded[i]]);
        tSupply = tSupply.sub(_tOwned[_excluded[i]]);
    }
    if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
    return (rSupply, tSupply);
}
```

Conclusion

Low-severity issues exist within smart contracts. Smart contracts are free from any critical or high-severity issues.

NOTE: Please check the disclaimer above and note, that audit makes no statements or warranties on business model, investment attractiveness or code sustainability.

Soken Contact Info

Website: www.soken.io

Mob: (+1)416-875-4174

32 Britain Street, Toronto, Ontario, Canada

Telegram: @team_soken

GitHub: sokenteam

Twitter: @soken_team