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AUDIT COMPANY

CaribMars
Smart Contract Security Audit

TechRate

August, 2021

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the smart contracts alone. No applications or operations were reviewed for security. No product code has been reviewed.

Background

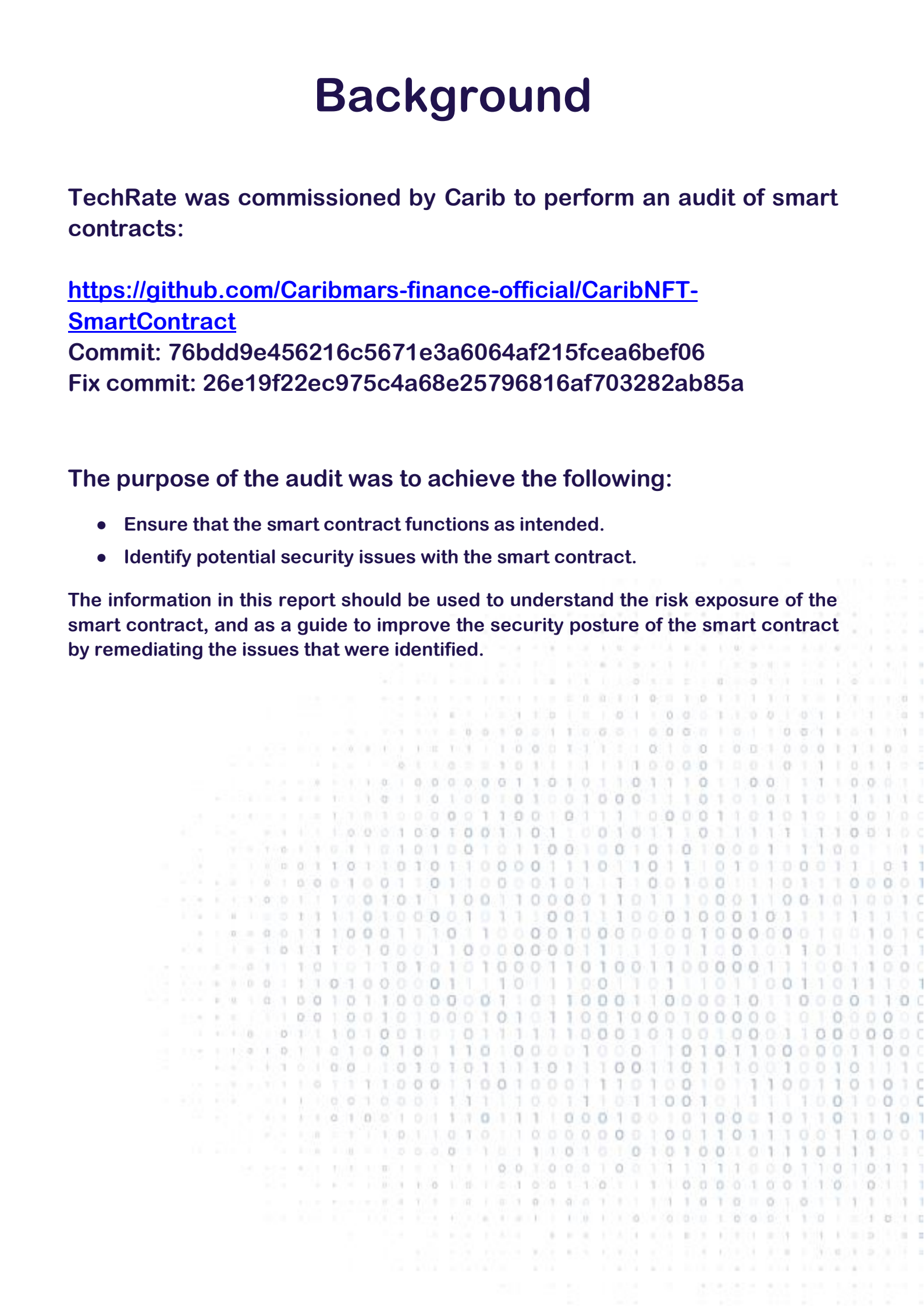
TechRate was commissioned by Carib to perform an audit of smart contracts:

https://github.com/Caribmars-finance-official/CaribNFT-SmartContract
Commit: 76bdd9e456216c5671e3a6064af215fcea6bef06
Fix commit: 26e19f22ec975c4a68e25796816af703282ab85a

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.



Issues Checking Status

	Issue description	Checking status
1.	Compiler errors.	Passed
2.	Race conditions and Reentrancy. Cross-function race conditions.	Passed
3.	Possible delays in data delivery.	Passed
4.	Oracle calls.	Passed
5.	Front running.	Passed
6.	Timestamp dependence.	Passed
7.	Integer Overflow and Underflow.	Passed
8.	DoS with Revert.	Passed
9.	DoS with block gas limit.	Low issues
10.	Methods execution permissions.	Passed
11.	Economy model of the contract.	Passed
12.	The impact of the exchange rate on the logic.	Passed
13.	Private user data leaks.	Passed
14.	Malicious Event log.	Passed
15.	Scoping and Declarations.	Passed
16.	Uninitialized storage pointers.	Passed
17.	Arithmetic accuracy.	Passed
18.	Design Logic.	Passed
19.	Cross-function race conditions.	Passed
20.	Safe Open Zeppelin contracts implementation and usage.	Passed
21.	Fallback function security.	Passed

Security Issues

High Severity Issues

1. ~~Calculation error~~ (fixed)

Issue:

- The function `swapTokens()` in GovernanceToken contract has possibility to send wrong BNB/ETH to marketing address. If `divValue` is less than `marketingDivisor` contract will send more BNB/ETH than swapped.
- Contract can accumulate more fees on sell process. But the function `swapTokens()` in GovernanceToken contract takes average number of sell/buy fee percent instead of accumulating fee amount.

Recommendation:

Create extra variables for accumulating fees or make sell and buy fees proportional to each other (1:1.5 or 1:2).

Medium Severity Issues

2. ~~Centralized risk~~ (fixed)

Issue:

- The function `addLiquidity()` sends owner addresses as `to` parameter. Owner address will acquire the generated LP tokens and after while accumulate a huge portion of LP tokens. It's unsecure to hold on one centralized address such a significant portion.

Recommendation:

Send contract address as `to` parameter.

Low Severity Issues

3. Out of gas

Issue:

- The function `includeInReward()` 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.

- 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.

Recommendation:

Check that the excluded array length is not too big.

Owner privileges (In the period when the owner is not renounced)

CaribMARS:

- Owner can change fees percentage.
- Owner can exclude(include) from(to) fee and reward.
- Owner can withdraw funds.
- Owner can change uniswap router address.
- Owner can enable/disable liquidity feature.
- Owner can change threshold value for swap and liquify.
- Owner can lock and unlock. By the way, using these functions the owner could leave as owner even after the ownership was renounced.

Conclusion

Smart contracts do not contain any high severity issues!

TechRate note:

Please check the disclaimer above and note, the audit makes no statements or warranties on business model, investment attractiveness or code sustainability. The report is provided for the only contract mentioned in the report and does not include any other potential contracts deployed by Owner.