#HashEx
BLOCKCHAIN SECURITY

Neighbourhoods Token

smart contracts
final audit report

September 2022

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1. Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice 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 disclaimer below – please make sure to read it in full.

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2. Overview

HashEx was commissioned by the Neighbourhoods team to perform an audit of their smart contract. The audit was conducted between 28/09/2022 and 28/09/2022.

The purpose of this audit was to achieve the following:

- Identify potential security issues with smart contracts
- Formally check the logic behind given smart contracts.

Information in this report should be used for understanding the risk exposure of smart contracts, and as a guide to improving the security posture of smart contracts by remediating the issues that were identified.

Standard ERC20 token contract. The code is available at the address. The contracts ERC20Capped, Ownable, ERC20, IERC20, IERC20Metadata, and Context are written according to the OpenZeppellin library standard, which is considered the best practice.

2.1 Summary

Project name	Neighbourhoods Token
URL	https://neighbourhoods.network/
Platform	Ethereum
Language	Solidity

2.2 Contracts

Name	Address
NHT	0x84342e932797FC62814189f01F0Fb05F52519708

3. Found issues

High	1 (100%)

C46. NHT

ID	Severity	Title	Status
C46I29	High	Mint per owner account	Open

4. Contracts

C46. NHT

Overview

Standard ERC20 token contract.

Issues

C46I29 Mint per owner account

High Open

The contract has a `mint()` function with the `onlyOwner()` modifier, using this function it is possible to mint an unlimited amount on the owner's account. If the owner's multisig addresses are compromised, it will lead to ruined tokenomics.

Recommendation

Renounce the token ownership.

5. Conclusion

1 high severity issue was found during the audit. No issues were resolved in the update.

Appendix A. Issues severity classification

- **Critical.** Issues that may cause an unlimited loss of funds or entirely break the contract workflow. Malicious code (including malicious modification of libraries) is also treated as a critical severity issue. These issues must be fixed before deployments or fixed in already running projects as soon as possible.
- **High.** Issues that may lead to a limited loss of funds, break interaction with users, or other contracts under specific conditions. Also, issues in a smart contract, that allow a privileged account the ability to steal or block other users' funds.
- **Medium.** Issues that do not lead to a loss of funds directly, but break the contract logic. May lead to failures in contracts operation.
- **Low.** Issues that are of a non-optimal code character, for instance, gas optimization tips, unused variables, errors in messages.
- **Info.** Issues that do not impact the contract operation. Usually, info severity issues are related to code best practices, e.g. style guide.

Appendix B. Issue status description

Resolved. The issue has been completely fixed.

Partially fixed. Parts of the issue have been fixed but the issue is not completely resolved.

Acknowledged. The team has been notified of the issue, no action has been taken.

Open. The issue remains unresolved.

Appendix C. List of examined issue types

- Business logic overview
- Functionality checks
- Following best practices
- Access control and authorization
- Reentrancy attacks
- Front-run attacks
- DoS with (unexpected) revert
- DoS with block gas limit
- Transaction-ordering dependence
- ERC/BEP and other standards violation
- Unchecked math
- Implicit visibility levels
- Excessive gas usage
- Timestamp dependence
- Forcibly sending ether to a contract
- Weak sources of randomness
- Shadowing state variables
- Usage of deprecated code

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