Smart Contract

Security Assessment

For SupChain Staking
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Table of Contents

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Cryptocurrencies and any technologies by extension directly or indirectly related to cryptocurrencies are highly volatile and speculative by nature. All reasonable due diligence and safeguards may yet be insufficient, and users should exercise considerable caution when participating in any shape or form in this nascent industry.

The audit report has made all reasonable attempts to provide clear and articulate recommendations to the Project team with respect to the rectification, amendment and/or revision of any highlighted issues, vulnerabilities or exploits within the contracts provided. It is the sole responsibility of the Project team to sufficiently test and perform checks, ensuring that the contracts are functioning as intended, specifically that the functions therein contained within said contracts have the desired intended effects, functionalities and outcomes of the Project team.

Auditor retains full rights over all intellectual property (including expertise and new attack or exploit vectors) discovered during the audit process. Auditor is therefore allowed and expected to re-use this knowledge in subsequent audits and to inform existing projects that may have similar vulnerabilities. The auditor may, at its discretion, claim bug bounties from third-parties while doing so.

Executive Summary

Severity	Found
High	0
Medium	0
Low	1
Informational	22
Total	23

We performed an independent technical audit to identify Smart Contracts uncertainties. This shall protect the code from illegitimate authorization attempts or external & internal threats of any type. This also ensures end-to-end proofing of the contract from frauds. The audit was performed semi-manually. We analyzed the Smart Contracts code line-by-line and used an automation tool to report any suspicious code.

The following tools were used:

- Truffle
- Hardhat
- Remix IDE
- Slither
- Sol2UML

Overview

This report has been prepared for SupChainStaking for the Ethereum Network. This audit provides a user-centered examination of the smart contracts to look for vulnerabilities, logic errors or other issues from both an internal and external perspective.

Summary

Project Name	SupChainStaking
Platform	Ethereum
Language	Solidity

Contracts Assessed

Name	Location
SUPC_Staking	Not Published
IERC20	In SUPC_Staking
Context	In SUPC_Staking
Ownable	In SUPC_Staking

Findings Summary

Severity	Found
High	0
Medium	0
Low	1
Informational	22
Total	23

Classification of Issues

High	Exploits, vulnerabilities or errors that will certainly or probabilistically lead towards loss of funds, control, or impairment of the contract and its functions. Issues under this classification are recommended to be fixed with utmost urgency.
Medium	Bugs or issues that may be subject to exploit, though their impact is somewhat limited. Issues under this classification are recommended to be fixed as soon as possible.
Low	Effects are minimal in isolation and do not pose a significant danger to the project or its users. Issues under this classification are recommended to be fixed nonetheless.
Informational	Consistency, syntax or style best practices, Generally pose a negligible level of risk, if any.

Manual Review

Issues Checking Status

Issue Description	Checking Status
Compiler errors	PASS
Race conditions and Reentrancy. Cross-function race conditions.	PASS
Possible delays in data delivery.	PASS
Oracle calls.	PASS
Front running.	PASS
Timestamp dependence.	PASS
Integer Overflow and Underflow.	PASS
DoS with Revert.	PASS
DoS with block gas limit.	PASS
Methods execution permissions.	PASS
Economy model of the contract.	PASS
The impact of the exchange rate on the logic.	PASS
Private user data leaks.	PASS
Malicious Event log.	PASS
Scoping and Declarations.	PASS
Uninitialized storage pointers.	PASS

Arithmetic accuracy.	PASS
Design Logic.	PASS
Cross-function race conditions.	PASS
Safe Open Zeppelin contracts implementation and usage.	PASS
Fallback function security.	PASS

Audit Findings

Severity	LOW
Contract	SUPC_Staking
Description	Stake withdraw can never release 100% of the tokens
Code Snippet	function withdraw(uint256 _index, uint256 _amount) public { ...
Recommendation	Stake withdraw can never release 100% of the tokens unless a) they are already fully vested, or b) they call the function programatically. If the intention is to allow flexibility with the fraction of tokens withdrawn by the caller, consider updating the function to allow the caller to withdraw based on a percentage.
Status	ACKNOWLEDGED

Functional Test Status

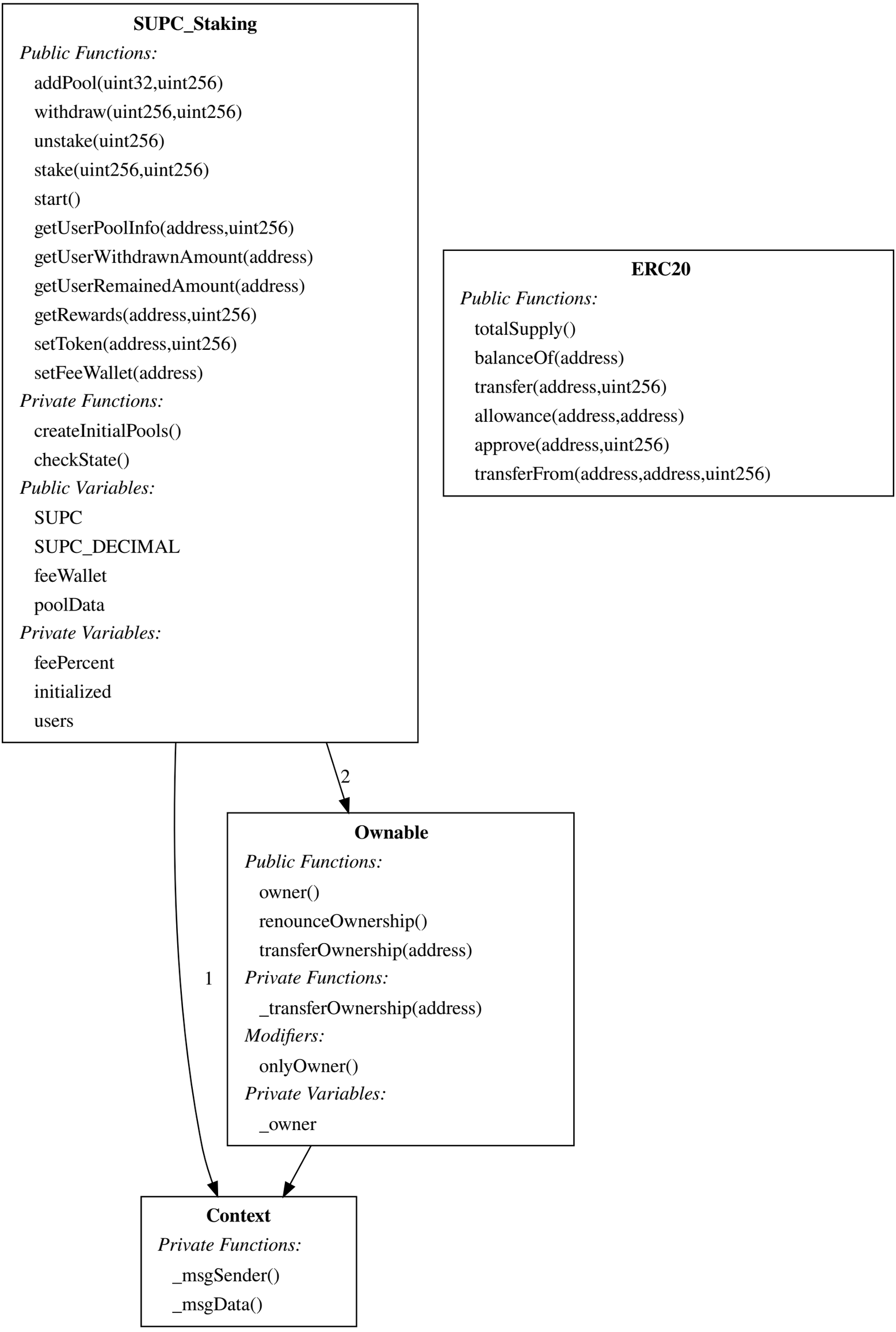
Function Name	Type/Return Type	Score
Context		
_contextSuffixLength	internal	PASS
_msgSender	internal	PASS
_msgData	internal	PASS
Ownable		
_checkOwner	internal	PASS
_transferOwnership	internal	PASS
constructor	internal	PASS
renounceOwnership	public	PASS
transferOwnership	public	PASS
owner	public	PASS
IERC20		
allowance	external	PASS
approve	external	PASS
balanceOf	external	PASS
totalSupply	external	PASS
transfer	external	PASS
transferFrom	external	PASS

SUPC_Staking		
addPool	public	PASS
checkStake	internal	PASS
constructor	public	PASS
createInitialPools	internal	PASS
getRewards	public	PASS
getUserPoolInfo	public	PASS
getUserRemainedAmount	public	PASS
getUserWithdrawnAmount	public	PASS
setFeeWallet	public	PASS
setToken	public	PASS
stake	public	PASS
start	public	PASS
unstake	public	PASS
withdraw	public	PASS

Omitted Results

Note: Any issues that have been omitted from this report have been deemed by the reviewing team as irrelevant, inapplicable, and/or negligible to the proper functioning of this contract. Thus, any omitted issues can be safely ignored.

Automated Review


SUPC_Staking
Public Functions:
addPool(uint32,uint256)
withdraw(uint256,uint256)
unstake(uint256)
stake(uint256,uint256)
start()
getUserPoolInfo(address,uint256)
getUserWithdrawnAmount(address)
getUserRemainedAmount(address)
getRewards(address,uint256)
setToken(address,uint256)
setFeeWallet(address)
Private Functions:
createInitialPools()
checkState()
Public Variables:
SUPC
SUPC_DECIMAL
feeWallet
poolData
Private Variables:
feePercent
initialized
users
ERC20
Public Functions:
totalSupply()
balanceOf(address)
transfer(address,uint256)
allowance(address,address)
approve(address,uint256)
transferFrom(address,address,uint256)
2
Ownable
Public Functions:
owner()
renounceOwnership()
transferOwnership(address)
1
Private Functions:
_transferOwnership(address)
Modifiers:
onlyOwner()
Private Variables:
_owner
Context
Private Functions:
_msgSender()
_msgData()

Conclusion

The smart contracts reviewed in this audit contain no critical severity issues and all Medium to Low issues have either been corrected or acknowledged.

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.

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