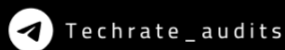


TechRate
September, 2023



SMART CONTRACTS SECURITY AUDIT REPORT



Audit Details



Audited project

Space Alpaca



Deployer address

0xd3c2e3f917cFf22678205B130B264B76d47Da65F



Client contacts:

Space Alpaca team



Blockchain

Binance Smart Chain



Project website:

<https://www.space-alpaca.com>

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 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 Space Alpaca to perform an audit of smart contracts:

<https://bscscan.com/address/0x80cf46413abb802599cbabc1a509aecbc2696f4c#code>

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.

Contracts Details

Token contract details for 18.09.2023

Contract name	spal_v4_bsc.sol
Contract address	0x80cf46413aBB802599CBaBC1A509aeCbC2696F4c
Total supply	0
Token ticker	SPAL
Decimals	18
Token holders	0
Transactions count	0
Top 100 holders dominance	0
Total fees	12
Buyback address	0x1AbB2EdA7cFe84Eb39753E3113dA28C9fB265BAf
Marketing address	0x50e0EbDC2650C3EDD296586247491e3eF3339FC8
PCS V2 Pair	0x8E48f520972dde639fFb8589Dfb1e9BEc6513EB4
Contract deployer address	0xd3c2e3f917cFf22678205B130B264B76d47Da65F
Owner address	0xd3c2e3f917cFf22678205B130B264B76d47Da65F

Contract functions details

+ Context

- [Int] _msgSender
- [Int] _msgData

+ Ownable (Context)

- [Pub] <Constructor> #
- [Pub] owner
- [Pub] transferOwnership #
 - modifiers: onlyOwner
- [Int] _transferOwnership #

+ [Int] IUniswapV2Router01

- [Ext] factory
- [Ext] WETH
- [Ext] addLiquidity #
- [Ext] addLiquidityETH (\$)
- [Ext] removeLiquidity #
- [Ext] removeLiquidityETH #
- [Ext] removeLiquidityWithPermit #
- [Ext] removeLiquidityETHWithPermit #
- [Ext] swapExactTokensForTokens #
- [Ext] swapTokensForExactTokens #
- [Ext] swapExactETHForTokens (\$)
- [Ext] swapTokensForExactETH #
- [Ext] swapExactTokensForETH #
- [Ext] swapETHForExactTokens (\$)
- [Ext] quote
- [Ext] getAmountOut
- [Ext] getAmountIn
- [Ext] getAmountsOut
- [Ext] getAmountsIn

DF1408

65

76C6

5C780

29C4CAD8

C4

87C9C

31B7A384

DF1408

65

+ [Int] IERC20

- [Ext] name
- [Ext] symbol
- [Ext] decimals
- [Ext] totalSupply
- [Ext] balanceOf
- [Ext] allowance
- [Ext] approve #
- [Ext] transfer #
- [Ext] transferFrom #

+ [Int] IUniswapV2Factory

- [Ext] feeTo
- [Ext] feeToSetter
- [Ext] getPair
- [Ext] allPairs
- [Ext] allPairsLength
- [Ext] createPair #
- [Ext] setFeeTo #
- [Ext] setFeeToSetter #

+ [Int] IUniswapV2Router02 (IUniswapV2Router01)

- [Ext] removeLiquidityETHSupportingFeeOnTransferTokens #
- [Ext] removeLiquidityETHWithPermitSupportingFeeOnTransferTokens #
- [Ext] swapExactTokensForTokensSupportingFeeOnTransferTokens #
- [Ext] swapExactETHForTokensSupportingFeeOnTransferTokens (\$)
- [Ext] swapExactTokensForETHSupportingFeeOnTransferTokens #

+ SPAL (IERC20, Ownable)

- [Pub] <Constructor> #
- [Pub] totalSupply
- [Pub] balanceOf
- [Pub] transfer #
- [Pub] allowance

- [Pub] approve #
- [Pub] transferFrom #
- [Pub] increaseAllowance #
- [Pub] decreaseAllowance #
- [Ext] setAllFeePercent #
 - modifiers: onlyOwner
- [Ext] setFeeWallet #
 - modifiers: onlyOwner
- [Ext] <Fallback> (\$)
- [Prv] _takeLiquidity #
- [Prv] calculateLiquidityFee
- [Prv] _approve #
- [Prv] _transfer #
- [Pub] distributeBurnedTokens #
 - modifiers: onlyOwner
- [Prv] sellBurnedTokens #
- [Prv] swapBNBForTokens #
- [Prv] swapTokensForBNB #
- [Prv] addLiquidity #
- [Prv] _tokenTransfer #
- [Pub] migrateLegacyToken #

(\$) = payable function

= non-constant function

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

No high severity issues found.

⊙ Medium Severity Issues

No medium severity issues found.

● Low Severity Issues

1. Rounding error

Issue:

- At some calculation with division, it goes first. In Solidity we don't have floating points, but instead we get rounding errors.

Recommendation:





Do division after multiplication.

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



- Owner can change fees.
- Owner can change `_marketingAddress` and `_buybackAddress`.
- Owner can manually add liquidity.

Testnet deployment

Contracts Description Table

Contract	Type	Bases	Mutability	Modifiers
L	Function Name	Visibility		
SPAL	Implementation	IERC20, Ownable		
L	transfer	Public !		NO!
L	approve	Public !		NO!
L	transferFrom	Public !		NO!
L	migrateLegacyToken	Public !		NO!

Legend

Symbol	Meaning
	Function can modify state
	Function is payable

Conclusion

Smart contracts contain low severity issues! Liquidity pair contract's security is not checked due to out of scope. The further transfers and operations with the funds raise are not related to this particular contract.

Liquidity locking details are NOT provided by the team.

Security score: 85.

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.