



Swiss NFT Fund
**Smart Contract
Audit Report**

TABLE OF CONTENTS

[Audited Details](#)

- Audited Project
- Blockchain
- Addresses
- Project Website
- Codebase

[Summary](#)

- Contract Summary
- Audit Findings Summary
- Vulnerabilities Summary

[Conclusion](#)

[Audit Results](#)

[Smart Contract Analysis](#)

- Detected Vulnerabilities

[Disclaimer](#)

[About Us](#)

AUDITED DETAILS

Audited Project

| Project name | Token ticker | Blockchain |
|----------------|--------------|------------|
| Swiss NFT Fund | swissnftfund | Ethereum |

Addresses

| | |
|---------------------------|--|
| Contract address | 0x64C1C9a38038AE73C3699B8dc347fEFDa2221E93 |
| Contract deployer address | 0x975603Ae72f9551d26CeB27A00CD4452f8187768 |

Project Website

<https://www.swissnftfund.io/>

Codebase

<https://etherscan.io/address/0x64C1C9a38038AE73C3699B8dc347fEFDa2221E93#code>

SUMMARY

We are forming an NFT fund in the form of an ERC20 token. 8% of the volume flows into the NFT Fund. Our experienced team invests only in blue chips and potential blue chips. Very thorough research is carried out and investments are made only in projects where it is ensured that there is no fraud. NFTs purchased by the fund are held for a minimum period of 1 year. Profits are used to buy and burn our own token. 2% of the volume will go automatically to the loyal holders in the form of swissnftfund tokens. We will build a gallery, pitch new NFT projects, launch new collections with established artists from [REDACTED] and most importantly: We will lead Swiss investor groups and private investors into the CRYPTOSpace. All profits from the NFT Collections are also passed on to the community in the form of buybacks and burns.

Contract Summary

Documentation Quality

Swiss NFT Fund provides a very good documentation with standard of solidity base code.

- The technical description is provided clearly and structured and also don't have any high risk issue.

Code Quality

The Overall quality of the basecode is standard.

- Standard solidity basecode and rules are already followed by Swiss NFT Fund with the discovery of several low issues.

Test Coverage

Test coverage of the project is 100% (Through Codebase)

Audit Findings Summary

- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 106, 121, 129, 130, 144, 198, 198, 199, 199, 226, 226, 227, 227, 228, 228, 377, 456 and 608.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 35.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 423, 424, 457 and 609.

CONCLUSION

We have audited the Swiss NFT Fund project released on November 2022 to discover issues and identify potential security vulnerabilities in Swiss NFT Fund Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the Swiss NFT Fund smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some arithmetic operation issues, a floating pragma is set, and out of bounds array access which the index access expression can cause an exception in case of the use of an invalid array index value.

AUDIT RESULT

| Article | Category | Description | Result |
|-----------------------------------|--------------------|---|-------------|
| Default Visibility | SWC-100 SWC-108 | Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously. | PASS |
| Integer Overflow and Underflow | SWC-101 | If unchecked math is used, all math operations should be safe from overflows and underflows. | ISSUE FOUND |
| Outdated Compiler Version | SWC-102 | It is recommended to use a recent version of the Solidity compiler. | PASS |
| Floating Pragma | SWC-103 | Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly. | ISSUE FOUND |
| Unchecked Call Return Value | SWC-104 | The return value of a message call should be checked. | PASS |
| Unprotected Ether Withdrawal | SWC-105 | Due to missing or insufficient access controls, malicious parties can withdraw from the contract. | PASS |
| SELFDESTRUCT Instruction | SWC-106 | The contract should not be self-destructible while it has funds belonging to users. | PASS |
| Reentrancy | SWC-107 | Check effect interaction pattern should be followed if the code performs recursive call. | PASS |
| Uninitialized Storage Pointer | SWC-109 | Uninitialized local storage variables can point to unexpected storage locations in the contract. | PASS |
| Assert Violation | SWC-110 SWC-123 | Properly functioning code should never reach a failing assert statement. | ISSUE FOUND |
| Deprecated Solidity Functions | SWC-111 | Deprecated built-in functions should never be used. | PASS |
| Delegate call to Untrusted Callee | SWC-112 | Delegatecalls should only be allowed to trusted addresses. | PASS |

| | | | |
|-------------------------------------|-------------------------------|---|------|
| DoS (Denial of Service) | SWC-113 SWC-128 | Execution of the code should never be blocked by a specific contract state unless required. | PASS |
| Race Conditions | SWC-114 | Race Conditions and Transactions Order Dependency should not be possible. | PASS |
| Authorization through tx.origin | SWC-115 | tx.origin should not be used for authorization. | PASS |
| Block values as a proxy for time | SWC-116 | Block numbers should not be used for time calculations. | PASS |
| Signature Unique ID | SWC-117 SWC-121 SWC-122 | Signed messages should always have a unique id. A transaction hash should not be used as a unique id. | PASS |
| Incorrect Constructor Name | SWC-118 | Constructors are special functions that are called only once during the contract creation. | PASS |
| Shadowing State Variable | SWC-119 | State variables should not be shadowed. | PASS |
| Weak Sources of Randomness | SWC-120 | Random values should never be generated from Chain Attributes or be predictable. | PASS |
| Write to Arbitrary Storage Location | SWC-124 | The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations. | PASS |
| Incorrect Inheritance Order | SWC-125 | When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/. | PASS |
| Insufficient Gas Griefing | SWC-126 | Insufficient gas griefing attacks can be performed on contracts which accept data and use it in a sub-call on another contract. | PASS |
| Arbitrary Jump Function | SWC-127 | As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value. | PASS |

| | | | |
|----------------------------|--------------------|--|------|
| Typographical Error | SWC-129 | A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable. | PASS |
| Override control character | SWC-130 | Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract. | PASS |
| Unused variables | SWC-131 SWC-135 | Unused variables are allowed in Solidity and they do not pose a direct security issue. | PASS |
| Unexpected Ether balance | SWC-132 | Contracts can behave erroneously when they strictly assume a specific Ether balance. | PASS |
| Hash Collisions Variable | SWC-133 | Using <code>abi.encodePacked()</code> with multiple variable length arguments can, in certain situations, lead to a hash collision. | PASS |
| Hardcoded gas amount | SWC-134 | The <code>transfer()</code> and <code>send()</code> functions forward a fixed amount of 2300 gas. | PASS |
| Unencrypted Private Data | SWC-136 | It is a common misconception that private type variables cannot be read. | PASS |

SMART CONTRACT ANALYSIS

| | |
|------------------|--|
| Started | Wednesday Nov 02 2022 02:47:28 GMT+0000 (Coordinated Universal Time) |
| Finished | Thursday Nov 03 2022 10:39:31 GMT+0000 (Coordinated Universal Time) |
| Mode | Standard |
| Main Source File | SWISSNFTFUND.sol |

Detected Issues

| ID | Title | Severity | Status |
|---------|--------------------------------------|----------|--------------|
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |

| | | | |
|---------|--------------------------------------|-----|--------------|
| SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED | low | acknowledged |
| SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED | low | acknowledged |
| SWC-103 | A FLOATING PRAGMA IS SET. | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |
| SWC-110 | OUT OF BOUNDS ARRAY ACCESS | low | acknowledged |

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 106

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
105     function add(uint256 a, uint256 b) internal pure returns (uint256) {
106         uint256 c = a + b;
107         require(c >= a, "SafeMath: addition overflow");
108         return c;
109     }
110
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 121

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
120     require(b <= a, errorMessage);
121     uint256 c = a - b;
122     return c;
123 }
124
125
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 129

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
128     }
129     uint256 c = a * b;
130     require(c / a == b, "SafeMath: multiplication overflow");
131     return c;
132     }
133
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 130

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
129  uint256 c = a * b;
130  require(c / a == b, "SafeMath: multiplication overflow");
131  return c;
132  }
133
134
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 144

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
143     require(b > 0, errorMessage);
144     uint256 c = a / b;
145     return c;
146 }
147 }
148
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 198

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
197 uint256 private constant MAX = ~uint256(0);
198 uint256 private constant _tTotal = 1000000000 * 10**9;
199 uint256 private _rTotal = (MAX - (MAX % _tTotal));
200 uint256 private _tFeeTotal;
201
202
```


SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 198

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
197 uint256 private constant MAX = ~uint256(0);
198 uint256 private constant _tTotal = 1000000000 * 10**9;
199 uint256 private _rTotal = (MAX - (MAX % _tTotal));
200 uint256 private _tFeeTotal;
201
202
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 199

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
198 uint256 private constant _tTotal = 1000000000 * 10**9;
199 uint256 private _rTotal = (MAX - (MAX % _tTotal));
200 uint256 private _tFeeTotal;
201
202 // Taxes
203
```

SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 199

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
198 uint256 private constant _tTotal = 1000000000 * 10**9;
199 uint256 private _rTotal = (MAX - (MAX % _tTotal));
200 uint256 private _tFeeTotal;
201
202 // Taxes
203
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 226

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
225
226 uint256 public _maxTxAmount = 20000000 * 10**9; // 2%
227 uint256 public _maxWalletSize = 20000000 * 10**9; // 2%
228 uint256 public _swapTokensAtAmount = 15000 * 10**9; // .015%
229
230
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 226

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
225
226 uint256 public _maxTxAmount = 20000000 * 10**9; // 2%
227 uint256 public _maxWalletSize = 20000000 * 10**9; // 2%
228 uint256 public _swapTokensAtAmount = 15000 * 10**9; // .015%
229
230
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 227

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
226 uint256 public _maxTxAmount = 20000000 * 10**9; // 2%
227 uint256 public _maxWalletSize = 20000000 * 10**9; // 2%
228 uint256 public _swapTokensAtAmount = 15000 * 10**9; // .015%
229
230 event MaxTxAmountUpdated(uint256 _maxTxAmount);
231
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 227

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
226 uint256 public _maxTxAmount = 20000000 * 10**9; // 2%
227 uint256 public _maxWalletSize = 20000000 * 10**9; // 2%
228 uint256 public _swapTokensAtAmount = 15000 * 10**9; // .015%
229
230 event MaxTxAmountUpdated(uint256 _maxTxAmount);
231
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 228

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
227 uint256 public _maxWalletSize = 20000000 * 10**9; // 2%
228 uint256 public _swapTokensAtAmount = 15000 * 10**9; // .015%
229
230 event MaxTxAmountUpdated(uint256 _maxTxAmount);
231 modifier lockTheSwap {
232
```


SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 228

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
227 uint256 public _maxWalletSize = 20000000 * 10**9; // 2%
228 uint256 public _swapTokensAtAmount = 15000 * 10**9; // .015%
229
230 event MaxTxAmountUpdated(uint256 _maxTxAmount);
231 modifier lockTheSwap {
232
```

SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 377

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
376     if(to != uniswapV2Pair) {
377         require(balanceOf(to) + amount < _maxWalletSize, "TOKEN: Balance exceeds wallet
size!");
378     }
379
380     uint256 contractTokenBalance = balanceOf(address(this));
381
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 456

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
455     function blockBots(address[] memory bots_) public onlyOwner {
456         for (uint256 i = 0; i < bots_.length; i++) {
457             bots[bots_[i]] = true;
458         }
459     }
460
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 608

low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

Source File

- SWISSNFTFUND.sol

Locations

```
607  function excludeMultipleAccountsFromFees(address[] calldata accounts, bool
excluded) public onlyOwner {
608  for(uint256 i = 0; i < accounts.length; i++) {
609  _isExcludedFromFee[accounts[i]] = excluded;
610  }
611  }
612
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 35

low SEVERITY

The current pragma Solidity directive is ""^0.8.9"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

Source File

- SWISSNFTFUND.sol

Locations

```
34 // SPDX-License-Identifier: Unlicensed
35 pragma solidity ^0.8.9;
36
37 abstract contract Context {
38     function _msgSender() internal view virtual returns (address) {
39
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 423

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- SWISSNFTFUND.sol

Locations

```
422 address[] memory path = new address[](2);
423 path[0] = address(this);
424 path[1] = uniswapV2Router.WETH();
425 _approve(address(this), address(uniswapV2Router), tokenAmount);
426 uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
427
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 424

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- SWISSNFTFUND.sol

Locations

```
423 path[0] = address(this);
424 path[1] = uniswapV2Router.WETH();
425 _approve(address(this), address(uniswapV2Router), tokenAmount);
426 uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
427 tokenAmount,
428
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 457

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- SWISSNFTFUND.sol

Locations

```
456   for (uint256 i = 0; i < bots_.length; i++) {  
457     bots[bots_[i]] = true;  
458   }  
459 }  
460  
461
```


SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 609

low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

Source File

- SWISSNFTFUND.sol

Locations

```
608   for(uint256 i = 0; i < accounts.length; i++) {
609     _isExcludedFromFee[accounts[i]] = excluded;
610   }
611 }
612
613
```

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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of 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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