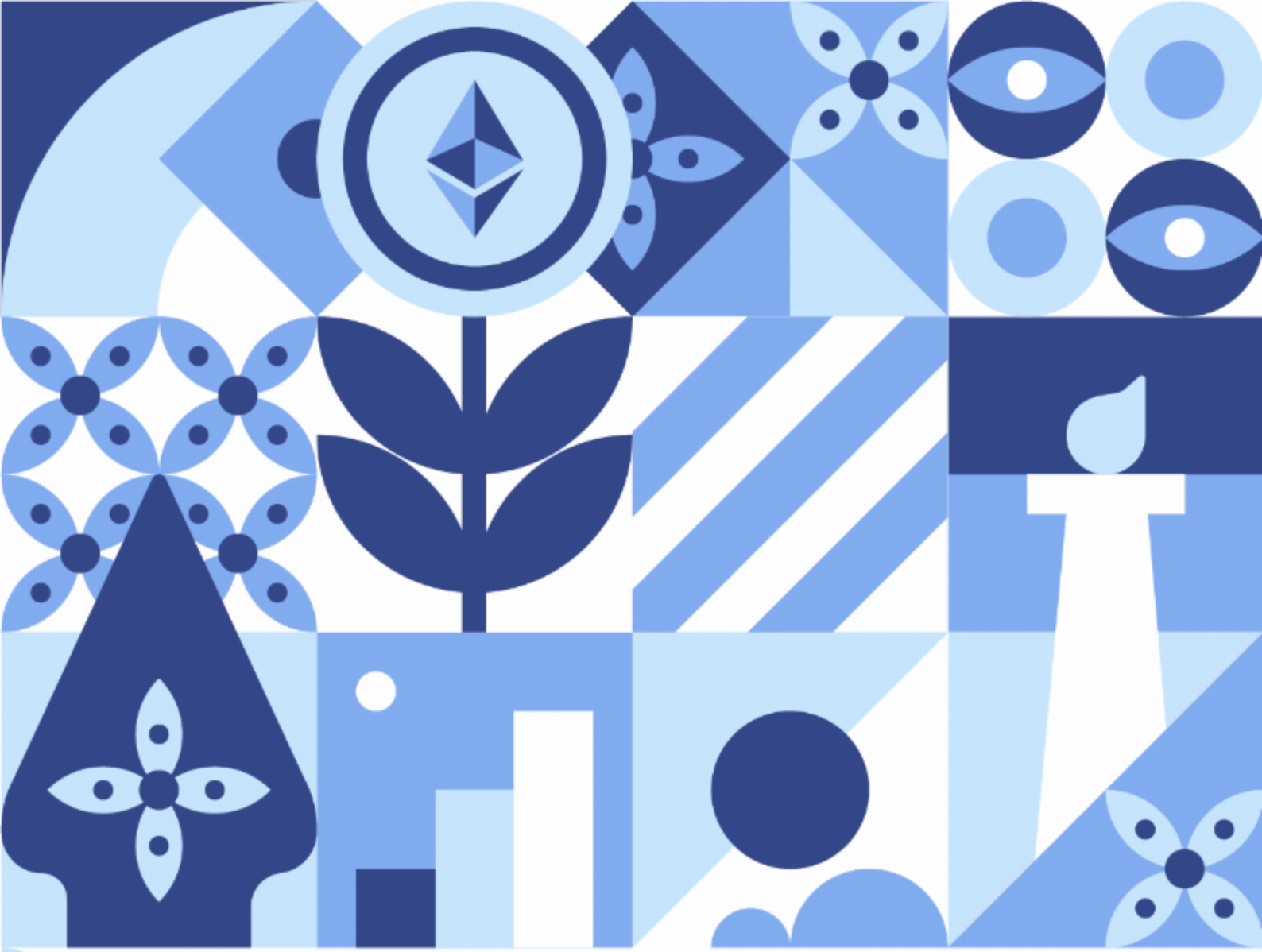

SMLToken

Smart Contract Audit Report

SYSFIXED

31 May 2022

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
SMLToken	SML	Ethereum

Addresses

Contract address	0x1A403E1c96792dFedb8232cF56400Eb72Ab95Acb
Contract deployer address	0x74d737D0fCfA82Cf845749B765943B1806D981C8

Project Website

https://ggdgame.saltmarble.io/

Codebase

https://etherscan.io/address/0x1A403E1c96792dFedb8232cF56400Eb72Ab95Acb#code

SUMMARY

The SML ecosystem is based on the game industry. Famous IP characters were used, and most of the main characters and items used in the game were NFTized. It is also a P2E platform that aims to build SML's own metaverse ecosystem that can ultimately change the added value created while enjoying the game into goods. In particular, the global market size of the P2E industry is growing faster. The SML project is also closely related to NFT and the Metaverse industry.

Contract Summary

Documentation Quality

SMLToken provides a very poor documentation with standard of solidity base code.

- The technical description is provided unclear and disorganized.

Code Quality

The Overall quality of the basecode is poor.

- Solidity basecode and rules are unclear and disorganized by SMLToken.

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 469, 461, 537, 547, 496, and 534.
- SWC-102 | It is recommended to use a recent version of the Solidity compiler on lines 5.

CONCLUSION

We have audited the SMLToken project released in May 2022 to find issues and identify potential security vulnerabilities in the SMLToken project. This process is used to find technical issues and security loopholes that may be found in smart contracts.

The security audit report gave unsatisfactory results with the discovery of high-risk issues and several other low-risk issues.

Writing a contract that does not follow the Solidity style guide can pose a significant risk. The high risk problem we found is the arithmetic operator can overflow and an outdated compiler version is used. It is possible to cause an arithmetic overflow. Prevent the overflow by constraining inputs using the require() statement or use the OpenZeppelin SafeMath library for integer arithmetic operations. Refer to the transaction trace generated for this issue to reproduce the overflow and also udsing an outdated compiler version can be problematic especially if there are publicly disclosed bugs and issues that affect the current compiler version.

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.	ISSUE FOUND
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	PASS
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.	PASS
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 abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() 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	Monday May 30 2022 00:22:40 GMT+0000 (Coordinated Universal Time)
Finished	Tuesday May 31 2022 11:26:06 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	SMLToken.sol

Detected Issues

ID	Title	Severity	Status
SWC-101	THE ARITHMETIC OPERATION CAN UNDERFLOW.	high	acknowledged
SWC-101	THE ARITHMETIC OPERATION CAN OVERFLOW.	high	acknowledged
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SWC-101	THE ARITHMETIC OPERATOR CAN OVERFLOW.	high	acknowledged
SWC-101	THE ARITHMETIC OPERATION CAN OVERFLOW.	high	acknowledged
SWC-102	AN OUTDATED COMPILER VERSION IS USED.	low	acknowledged

SWC-101 | THE ARITHMETIC OPERATION CAN UNDERFLOW.

LINE 469

high SEVERITY

It is possible to cause an arithmetic underflow. Prevent the underflow by constraining inputs using the require() statement or use the OpenZeppelin SafeMath library for integer arithmetic operations. Refer to the transaction trace generated for this issue to reproduce the underflow.

Source File

- SMLToken.sol

Locations

```
468   lockInfo[_holder][i] = lockInfo[_holder][lockInfo[_holder].length - 1];
469   i--;
470   }
471   lockInfo[_holder].length--;
472
473
```

SWC-101 | THE ARITHMETIC OPERATION CAN OVERFLOW.

LINE 461

high SEVERITY

It is possible to cause an arithmetic overflow. Prevent the overflow by constraining inputs using the require() statement or use the OpenZeppelin SafeMath library for integer arithmetic operations. Refer to the transaction trace generated for this issue to reproduce the overflow.

Source File

- SMLToken.sol

Locations

```
460
461   for(uint256 i = 0; i < lockInfo[_holder].length ; i++ ) {
462   if (lockInfo[_holder][i].releaseTime <= now) {
463   _balances[_holder] = _balances[_holder].add(lockInfo[_holder][i].balance);
464   emit Unlock(_holder, lockInfo[_holder][i].balance);
465
```

SWC-101 | THE ARITHMETIC OPERATION CAN OVERFLOW.

LINE 537

high SEVERITY

It is possible to cause an arithmetic overflow. Prevent the overflow by constraining inputs using the require() statement or use the OpenZeppelin SafeMath library for integer arithmetic operations. Refer to the transaction trace generated for this issue to reproduce the overflow.

Source File

- SMLToken.sol

Locations

```
536   emit Transfer(owner, _to, _value);
537   emit Lock(_to, _value, now + _afterTime);
538
539   return true;
540   }
541
```

SWC-101 | THE ARITHMETIC OPERATION CAN OVERFLOW.

LINE 547

high SEVERITY

It is possible to cause an arithmetic overflow. Prevent the overflow by constraining inputs using the require() statement or use the OpenZeppelin SafeMath library for integer arithmetic operations. Refer to the transaction trace generated for this issue to reproduce the overflow.

Source File

- SMLToken.sol

Locations

```
546   function afterTime(uint256 _value) public view returns (uint256) {
547   return now + _value;
548   }
549   }
550
```

SWC-101 | THE ARITHMETIC OPERATOR CAN OVERFLOW.

LINE 496

high SEVERITY

It is possible to cause an integer overflow or underflow in the arithmetic operation.

Source File

- SMLToken.sol

Locations

```
495   lockInfo[_holder].push(
496   LockInfo(now + _afterTime, _amount)
497   );
498   emit Lock(_holder, _amount, now + _afterTime);
499   }
500
```

SWC-101 | THE ARITHMETIC OPERATION CAN OVERFLOW.

LINE 534

high SEVERITY

It is possible to cause an arithmetic overflow. Prevent the overflow by constraining inputs using the require() statement or use the OpenZeppelin SafeMath library for integer arithmetic operations. Refer to the transaction trace generated for this issue to reproduce the overflow.

Source File

- SMLToken.sol

Locations

```
533   lockInfo[_to].push(
534   LockInfo(now + _afterTime, _value)
535   );
536   emit Transfer(owner, _to, _value);
537   emit Lock(_to, _value, now + _afterTime);
538
```

SWC-102 | AN OUTDATED COMPILER VERSION IS USED.

LINE 5

low SEVERITY

The compiler version specified in the pragma directive may have known bugs. It is recommended to use the latest minor release of solc 0.5 or 0.6. For more information on Solidity compiler bug reports and fixes refer to https://github.com/ethereum/solidity/releases.

Source File

- SMLToken.sol

Locations

```
4
5   pragma solidity 0.5.4;
6
7   // File: node_modules/openzeppelin-solidity/contracts/token/ERC20/IERC20.sol
8
9
```

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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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