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**Blockchain Security | Smart Contract Audits | KYC**

MADE IN GERMANY

**v1.0: 03. November, 2021**

**v1.1: 04. November, 2021**

**v2.0: 23. November, 2021**

# Audit

**Security Assessment**  
**29. November, 2021**

**For**



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# Disclaimer

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Version	Date	Description
1.0	03. November 2021	<ul style="list-style-type: none"><li>• Layout project</li><li>• Automated- /Manual-Security Testing</li><li>• Summary</li></ul>
1.1	03. November 2021	<ul style="list-style-type: none"><li>• xDai router address added</li></ul>
2.0	23. November 2021	<ul style="list-style-type: none"><li>• New functions added</li><li>• Reaudit</li></ul>
2.1	29. November 2021	<ul style="list-style-type: none"><li>• Bug fixes</li></ul>

## Network

v1.1: xDai Chain

V2.0: Binance Smart Chain

## Website

<https://nozomics.com/>

## Twitter

<https://twitter.com/nozomics1?s=21>

## Github

<https://github.com/Nozomics>



## Description

ZOMI is an InGameToken for the Nozomics Gaming System - an online platform for video games with leaderboards and progressive price pools. The Token is designed for settle the pay-in and pay-out process.

## Project Engagement

During the 9th of July, **ZOMI Team** engaged Solidproof.io to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. They provided Solidproof.io with access to their code repository and whitepaper.

## Logo



## Contract Link

**v1.0**

TBA

**v2.0**

<https://bscscan.com/address/0x94d1c3b55c673e241ee68e70fe75af3be15f7b82>

**v2.1**

<https://bscscan.com/address/0x5194433e6fb169ae74f06215d1fcfb642626cfee#code>

# Vulnerability & Risk Level

Risk represents the probability that a certain source-threat will exploit vulnerability, and the impact of that event on the organization or system. Risk Level is computed based on CVSS version 3.0.

Level	Value	Vulnerability	Risk (Required Action)
<b>Critical</b>	9 - 10	A vulnerability that can disrupt the contract functioning in a number of scenarios, or creates a risk that the contract may be broken.	Immediate action to reduce risk level.
<b>High</b>	7 - 8.9	A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.	Implementation of corrective actions as soon as possible.
<b>Medium</b>	4 - 6.9	A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.	Implementation of corrective actions in a certain period.
<b>Low</b>	2 - 3.9	A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.	Implementation of certain corrective actions or accepting the risk.
<b>Informational</b>	0 - 1.9	A vulnerability that have informational character but is not effecting any of the code.	An observation that does not determine a level of risk

# Auditing Strategy and Techniques Applied

Throughout the review process, care was taken to evaluate the repository for security-related issues, code quality, and adherence to specification and best practices. To do so, reviewed line-by-line by our team of expert pentesters and smart contract developers, documenting any issues as there were discovered.

## **Methodology**

The auditing process follows a routine series of steps:

1. Code review that includes the following:
  - i) Review of the specifications, sources, and instructions provided to SolidProof to make sure we understand the size, scope, and functionality of the smart contract.
  - ii) Manual review of code, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
  - iii) Comparison to specification, which is the process of checking whether the code does what the specifications, sources, and instructions provided to SolidProof describe.
2. Testing and automated analysis that includes the following:
  - i) Test coverage analysis, which is the process of determining whether the test cases are actually covering the code and how much code is exercised when we run those test cases.
  - ii) Symbolic execution, which is analysing a program to determine what inputs causes each part of a program to execute.
3. Best practices review, which is a review of the smart contracts to improve efficiency, effectiveness, clarify, maintainability, security, and control based on the established industry and academic practices, recommendations, and research.
4. Specific, itemized, actionable recommendations to help you take steps to secure your smart contracts.

## Used Code from other Frameworks/Smart Contracts (direct imports)

Imported packages:

```
Context  
Ownable  
IERC20  
IERC20Metadata  
ERC20  
IUniswapV2Factory  
IUniswapV2Router01  
IUniswapV2Router02
```



## Tested Contract Files

This audit covered the following files listed below with a SHA-1 Hash.

*A file with a different Hash has been modified, intentionally or otherwise, after the security review. A different Hash could be (but not necessarily) an indication of a changed condition or potential vulnerability that was not within the scope of this review.*

### v1.0

File Name	SHA-1 Hash
contracts/zomi.sol	bde7b1bb53ad4a54b0dcb0c6389b01a9aad0be81

### v1.1

File Name	SHA-1 Hash
contracts/zomi.sol	da39a3ee5e6b4b0d3255bfef95601890afd80709

### v2.0

File Name	SHA-1 Hash
contracts/zomi.sol	7367aedfe266f28fc237d4abb242cf113ab2059e

### v2.1

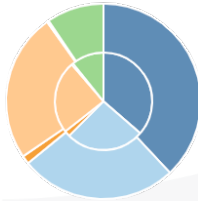
File Name	SHA-1 Hash
contracts/zomi.sol	54e6aa63eed59c81eb7cfa6023795074de303912

# Metrics

## Source Lines

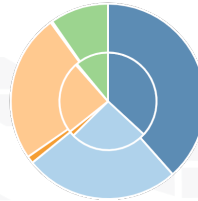
v1.0

source comment single block mixed  
empty todo blockEmpty



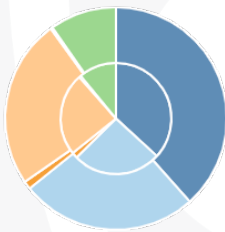
v2.0

source comment single block mixed  
empty todo blockEmpty



V2.1

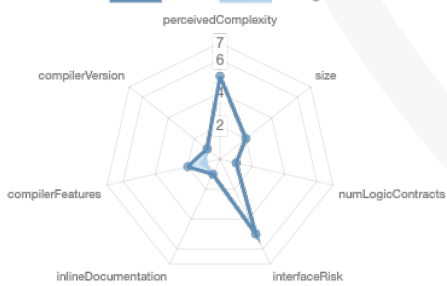
source comment single block mixed  
empty todo blockEmpty



## Risk Level

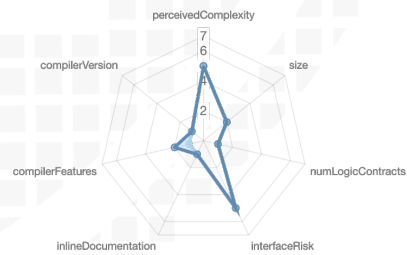
v1.0

overall average



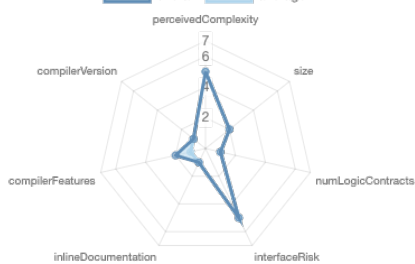
v2.0

overall average



v2.1

overall average



# Capabilities

## Components

Version	Contracts	Libraries	Interfaces	Abstract
1.0	2	0	5	2
2.0	2	0	5	2
2.1	2	0	5	2

## Exposed Functions

*This section lists functions that are explicitly declared public or payable. Please note that getter methods for public stateVars are not included.*

Version	Public	Payable
1.0	69	5
2.0	70	5
2.1	70	5

Version	External	Internal	Private	Pure	View
1.0	51	59	3	5	26
2.0	52	60	3	5	26
2.1	52	59	4	5	26

## State Variables

Version	Total	Public
1.0	17	8
2.0	18	9
2.1	18	9

## Capabilities

Version	Solidity Versions observed	Experimental Features	Can Receive Funds	Uses Assembly	Has Destroyable Contracts
1.0	<code>^0.8.7</code>		yes	**** (0 asm blocks)	
2.0	<code>^0.8.7</code>		yes	**** (0 asm blocks)	
2.1	<code>^0.8.0</code> <code>0.8.7</code>		yes	**** (0 asm blocks)	

Version	Transfers ETH	Low-Level Calls	DelegateCall	Uses Hash Functions	ECRecover	New/Create/Create2
1.0	yes					
2.0	yes					
2.1	yes					

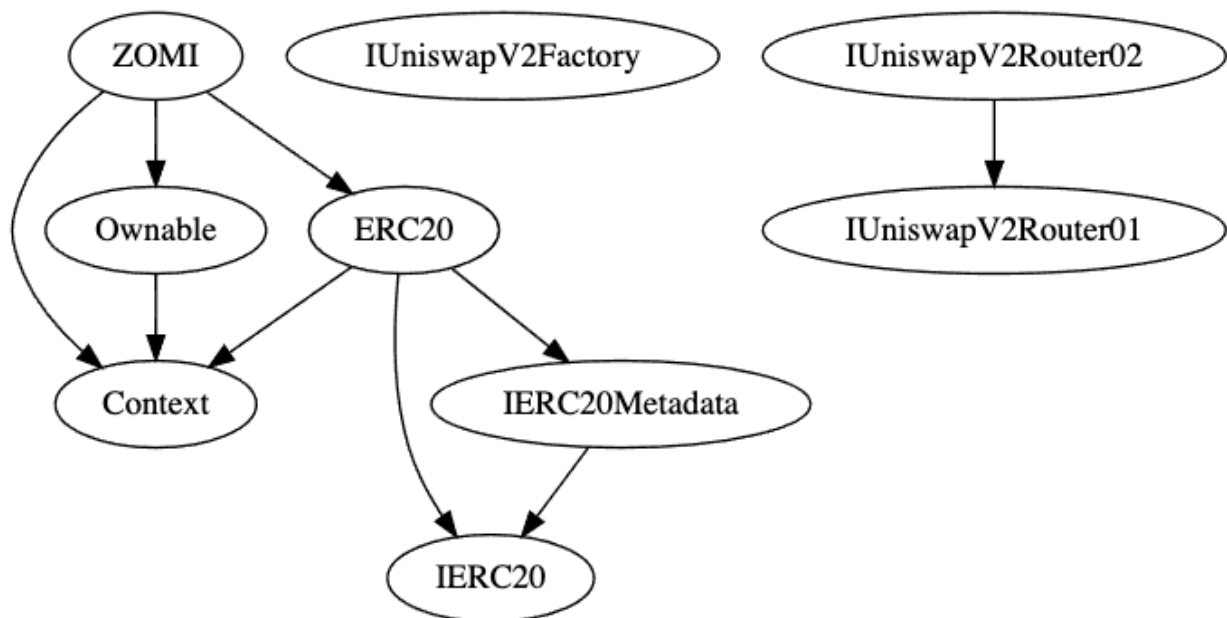
## Scope of Work

The above token Team provided us with the files that needs to be tested (Github, Bscscan, Etherscan, files, etc.). The scope of the audit is the main contract (usual the same name as team appended with .sol).

We will verify the following claims:

1. Correct implementation of Token standard
2. Deployer cannot mint any new tokens
3. Deployer cannot burn or lock user funds
4. Deployer cannot pause the contract
5. Overall checkup (Smart Contract Security)

## Inheritance Graph v1.0



## Verify Claims

### Correct implementation of Token standard

Tested	Verified
✓	✓

Function	Description	Exist	Tested	Verified
TotalSupply	provides information about the total token supply	✓	✓	✓
BalanceOf	provides account balance of the owner's account	✓	✓	✓
Transfer	executes transfers of a specified number of tokens to a specified address	✓	✓	✓
TransferFrom	executes transfers of a specified number of tokens from a specified address	✓	✓	✓
Approve	allow a spender to withdraw a set number of tokens from a specified account	✓	✓	✓
Allowance	returns a set number of tokens from a spender to the owner	✓	✓	✓

## Write functions of contract v1.0

addPoolData
approve
decreaseAllow...
editPoolData
increaseAllow...
renounceOwn...
setBurnFee
setMinTokenB...
setPairAddress
setReflectPool...
setSwapEnabl...
setTaxless
transfer
transferFrom
transferOwner...
withdrawStuc...

## v2.0

1. addPoolData
2. approve
3. decreaseAllowance
4. editPoolData
5. increaseAllowance
6. renounceOwnership
7. setBurnFee
8. setLiqFee
9. setMinTokenBeforeSwap
10. setReflectPoolFee
11. setRouterAddress
12. setSwapEnabled
13. setTaxless
14. transfer
15. transferFrom
16. transferOwnership
17. <u>withdrawStuckCurrencys</u>

## v2.1

1. addPoolData
2. approve
3. decreaseAllowance
4. editPoolData
5. increaseAllowance
6. renounceOwnership
7. setBurnFee
8. setLiqFee
9. setMinTokenBeforeSwap
10. setReflectPoolFee
11. setRouterAddress
12. setSwapEnabled
13. setTaxless
14. transfer
15. transferFrom
16. transferOwnership
17. withdrawStuckCurrencys

## Deployer cannot mint any new tokens

Name	Exist	Tested	Verified	File
Deployer cannot mint	✓	✓	✓	Main
Comment	Line: -			

Max / Total Supply: 3.000.000.000.000.000





## Deployer cannot burn or lock user funds

Version	Name	Exist	Tested	Verified
2.0	Deployer cannot lock	✓	✓	✗
2.1	Deployer cannot lock	✓	✓	✓
2.0	Deployer cannot burn	✓	✓	✓

Comments:

### v2.0

- If `activePoolSize = getAllActivePools().length` in line 848 is 0 that will revert the transaction because of the `splittedFee = _taxFee / activePoolSize`
  - You cannot division by 0

### V2.1

- Issue above fixed

## Deployer cannot pause the contract

Name	Exist	Tested	Verified
Deployer cannot pause	✓	✓	✓



## Overall checkup (Smart Contract Security)

Tested	Verified
✓	✓

### Legend

Attribute	Symbol
Verified / Checked	✓
Partly Verified	🚩
Unverified / Not checked	✗
Not available	—

## OnlyOwner functions

### v1.0

```
addPoolData  
editPoolData  
setPairAddress  
setTaxless  
setReflectPoolFee  
setSwapEnabled  
setMinTokenBeforeSwap  
setBurnFee  
withdrawStuckCurrencys
```

### V2.0





```
addPoolData  
editPoolData  
setRouterAddress  
setTaxless  
setReflectPoolFee  
setSwapEnabled  
setMinTokenBeforeSwap  
setBurnFee  
setLiqFee  
withdrawStuckCurrencys
```

# CallGraph







## Source Units in Scope





### v1.0

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/zomi.sol	4	5	915	681	340	325	434	
	Totals	4	5	915	681	340	325	434	

### v2.0

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/zomi.sol	4	5	931	697	351	326	449	
	Totals	4	5	931	697	351	326	449	

### v2.1

Type	File	Logic Contracts	Interfaces	Lines	nLines	nSLOC	Comment Lines	Complex. Score	Capabilities
	contracts/zomi.sol	4	5	993	720	343	319	455	
	Totals	4	5	993	720	343	319	455	

### Legend

Attribute	Description
Lines	total lines of the source unit
nLines	normalized lines of the source unit (e.g. normalizes functions spanning multiple lines)
nSLOC	normalized source lines of code (only source-code lines; no comments, no blank lines)
Comment Lines	lines containing single or block comments
Complexity Score	a custom complexity score derived from code statements that are known to introduce code complexity (branches, loops, calls, external interfaces, ...)

# Audit Results

## AUDIT PASSED

### Critical issues

- no critical issues found -

### High issues

- no high issues found -

### Medium issues

- no medium issues found -

### Low issues

Issue	File	Type	Line	Description
#1	Main	Contract doesn't import npm packages from source (like OpenZeppelin etc.)	-	We recommend to import all packages from npm directly without flatten the contract. Functions could be modified or can be susceptible to vulnerabilities
#2	Main	A floating pragma is set	6	The current pragma Solidity directive is „^0.8.7”.
#3	Main	Wrong variable is used	857	liqFee can only set to 0-20 by the owner  In line 857 liqFee is used instead of _liqFee which is calculated before in line 845

**FIXED**

### Informational issues

Issue	File	Type	Line	Description
#1	Main	Don't use static variables in the contract	855	We recommend to use state variables which can be set by the owner instead of static variables

## Audit Comments

### V1.0: 03. November 2021:

- ~~Wrong Routeraddress were used for Pancake / Uniswap Router~~
  - ~~Testnet address is set~~

### V1.1: 04. November 2021:

- V1.0 issue above fixed
  - xDai mainnet router address implemented

### v2.0: 23. November 2021:

- setLiqFee function added
- setPairAddress changed to setRouterAddress
- ~~If activePoolSize = getallActivePools().length in line 848 is 0 that will revert the transaction because of the splittedFee = \_taxFee / activePoolSize~~
  - ~~You cannot division by 0~~
- ~~In line 857 liqFee is used instead of \_liqFee which is calculated before in line 845~~

### v2.1: 29. November 2021:

- V2.0 issues above fixed
  - liqFee issue fixed
  - activePoolSize issue fixed



## SWC Attacks

ID	Title	Relationships	Status
<a href="#">SW C-13 6</a>	Unencrypted Private Data On-Chain	<a href="#">CWE-767: Access to Critical Private Variable via Public Method</a>	PASSED
<a href="#">SW C-13 5</a>	Code With No Effects	<a href="#">CWE-1164: Irrelevant Code</a>	PASSED
<a href="#">SW C-13 4</a>	Message call with hardcoded gas amount	<a href="#">CWE-655: Improper Initialization</a>	PASSED
<a href="#">SW C-13 3</a>	Hash Collisions With Multiple Variable Length Arguments	<a href="#">CWE-294: Authentication Bypass by Capture-replay</a>	PASSED
<a href="#">SW C-13 2</a>	Unexpected Ether balance	<a href="#">CWE-667: Improper Locking</a>	PASSED
<a href="#">SW C-13 1</a>	Presence of unused variables	<a href="#">CWE-1164: Irrelevant Code</a>	PASSED
<a href="#">SW C-13 0</a>	Right-To-Left-Override control character (U+202E)	<a href="#">CWE-451: User Interface (UI) Misrepresentation of Critical Information</a>	PASSED
<a href="#">SW C-12 9</a>	Typographical Error	<a href="#">CWE-480: Use of Incorrect Operator</a>	PASSED
<a href="#">SW C-12 8</a>	DoS With Block Gas Limit	<a href="#">CWE-400: Uncontrolled Resource Consumption</a>	PASSED

<a href="#">SW C-12 7</a>	Arbitrary Jump with Function Type Variable	<a href="#">CWE-695: Use of Low-Level Functionality</a>	<b>PASSED</b>
<a href="#">SW C-12 5</a>	Incorrect Inheritance Order	<a href="#">CWE-696: Incorrect Behavior Order</a>	<b>PASSED</b>
<a href="#">SW C-12 4</a>	Write to Arbitrary Storage Location	<a href="#">CWE-123: Write-what-where Condition</a>	<b>PASSED</b>
<a href="#">SW C-12 3</a>	Requirement Violation	<a href="#">CWE-573: Improper Following of Specification by Caller</a>	<b>PASSED</b>
<a href="#">SW C-12 2</a>	Lack of Proper Signature Verification	<a href="#">CWE-345: Insufficient Verification of Data Authenticity</a>	<b>PASSED</b>
<a href="#">SW C-12 1</a>	Missing Protection against Signature Replay Attacks	<a href="#">CWE-347: Improper Verification of Cryptographic Signature</a>	<b>PASSED</b>
<a href="#">SW C-12 0</a>	Weak Sources of Randomness from Chain Attributes	<a href="#">CWE-330: Use of Insufficiently Random Values</a>	<b>PASSED</b>
<a href="#">SW C-11 9</a>	Shadowing State Variables	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	<b>PASSED</b>
<a href="#">SW C-11 8</a>	Incorrect Constructor Name	<a href="#">CWE-665: Improper Initialization</a>	<b>PASSED</b>
<a href="#">SW C-11 7</a>	Signature Malleability	<a href="#">CWE-347: Improper Verification of Cryptographic Signature</a>	<b>PASSED</b>

<a href="#">SW C-11 6</a>	Timestamp Dependence	<a href="#">CWE-829: Inclusion of Functionality from Untrusted Control Sphere</a>	<b>PASSED</b>
<a href="#">SW C-11 5</a>	Authorization through tx.origin	<a href="#">CWE-477: Use of Obsolete Function</a>	<b>PASSED</b>
<a href="#">SW C-11 4</a>	Transaction Order Dependence	<a href="#">CWE-362: Concurrent Execution using Shared Resource with Improper Synchronization ('Race Condition')</a>	<b>PASSED</b>
<a href="#">SW C-11 3</a>	DoS with Failed Call	<a href="#">CWE-703: Improper Check or Handling of Exceptional Conditions</a>	<b>PASSED</b>
<a href="#">SW C-11 2</a>	Delegatecall to Untrusted Callee	<a href="#">CWE-829: Inclusion of Functionality from Untrusted Control Sphere</a>	<b>PASSED</b>
<a href="#">SW C-111</a>	Use of Deprecated Solidity Functions	<a href="#">CWE-477: Use of Obsolete Function</a>	<b>PASSED</b>
<a href="#">SW C-11 0</a>	Assert Violation	<a href="#">CWE-670: Always-Incorrect Control Flow Implementation</a>	<b>PASSED</b>
<a href="#">SW C-10 9</a>	Uninitialized Storage Pointer	<a href="#">CWE-824: Access of Uninitialized Pointer</a>	<b>PASSED</b>
<a href="#">SW C-10 8</a>	State Variable Default Visibility	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	<b>PASSED</b>
<a href="#">SW C-10 7</a>	Reentrancy	<a href="#">CWE-841: Improper Enforcement of Behavioral Workflow</a>	<b>PASSED</b>
<a href="#">SW C-10 6</a>	Unprotected SELFDESTRUCT Instruction	<a href="#">CWE-284: Improper Access Control</a>	<b>PASSED</b>

<a href="#">SW C-10 5</a>	Unprotected Ether Withdrawal	<a href="#">CWE-284: Improper Access Control</a>	<b>PASSED</b>
<a href="#">SW C-10 4</a>	Unchecked Call Return Value	<a href="#">CWE-252: Unchecked Return Value</a>	<b>PASSED</b>
<a href="#">SW C-10 3</a>	Floating Pragma	<a href="#">CWE-664: Improper Control of a Resource Through its Lifetime</a>	<b>NOT PASSED</b>
<a href="#">SW C-10 2</a>	Outdated Compiler Version	<a href="#">CWE-937: Using Components with Known Vulnerabilities</a>	<b>PASSED</b>
<a href="#">SW C-10 1</a>	Integer Overflow and Underflow	<a href="#">CWE-682: Incorrect Calculation</a>	<b>PASSED</b>
<a href="#">SW C-10 0</a>	Function Default Visibility	<a href="#">CWE-710: Improper Adherence to Coding Standards</a>	<b>PASSED</b>

The logo features the word "SolidProofed" in a white, handwritten-style script. The "P" is particularly large and stylized, with a long horizontal stroke that extends to the left. The background is a solid blue color with a faint, large shield emblem. The shield has a grid-like pattern on its right side and a solid blue area on its left side.

SolidProofed

**Blockchain Security | Smart Contract Audits | KYC**

A small horizontal bar representing the German flag, with black, red, and gold stripes.

MADE IN GERMANY